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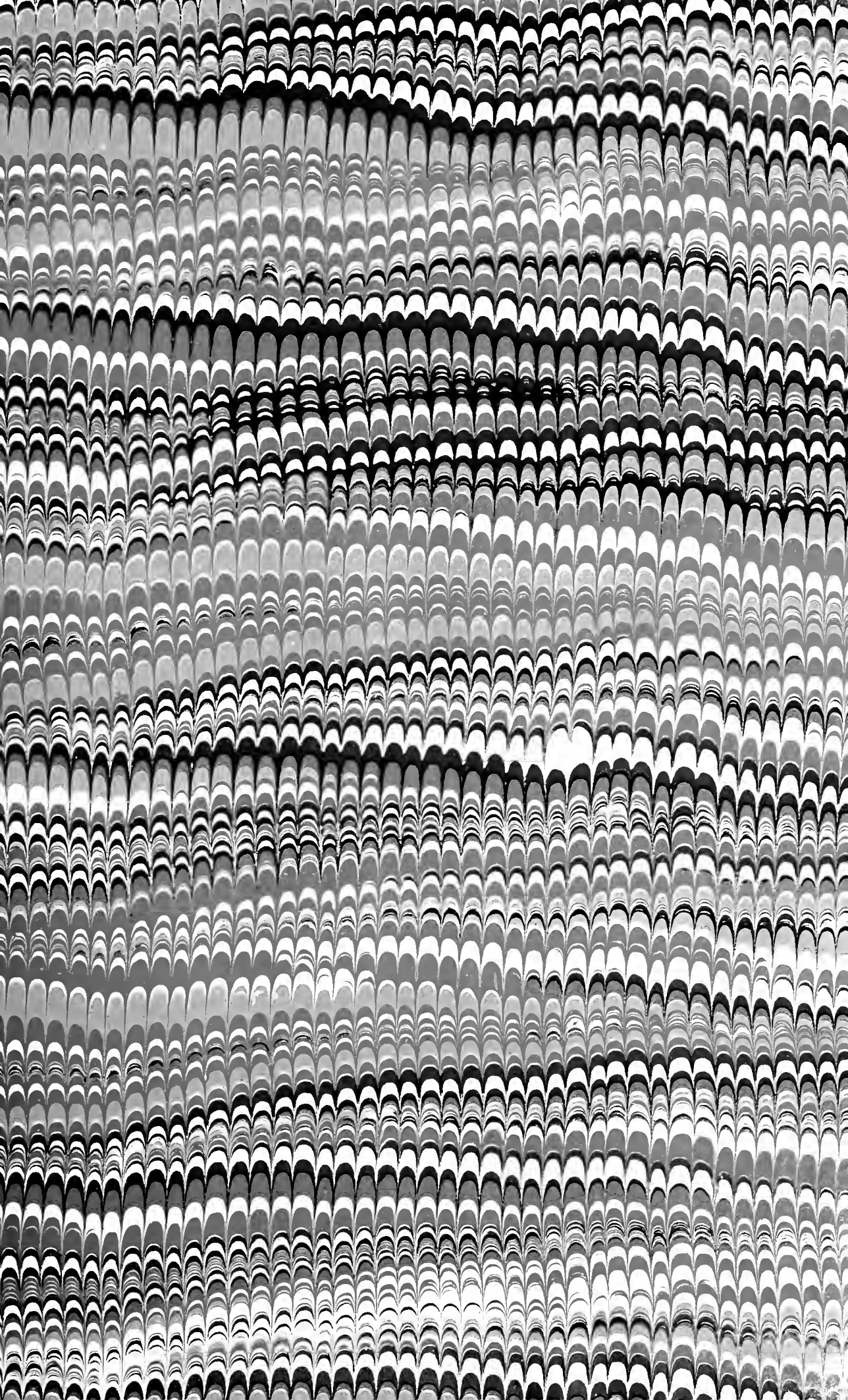
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EDITED BY A. LIAUTARD, M.D., V.S.,

ASSISTED BY

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AMERICAN VETERINARY REVIEW,

APRIL, 1879.

ORIGINAL ARTICLES.

ADDRESS DELIVERED AT THE COMMENCEMENT OF THE AMERICAN VETERINARY COLLEGE.

By PROF. J. LAW, of Cornell.

GENTLEMEN :

You have completed the course of study prescribed by your *Alma Mater*, and to-day you received the first reward of your earnest toil. To-day you have received that diploma which testifies to the success of your work in the class-room, the laboratory, and the hospital. To-day you matriculate into the higher school of the outside world, where your work is to be no longer the study of authorities and the receiving in faith of the general

principles and practical details of that science to which you propose to devote your lives. You will often miss the guiding hand and wise counsel of your former teachers, and you will at times be puzzled by new and unexpected developments and pathology; but you will steadily gain in good judgment, and the power of applying sound principles to individual cases, and in an intelligent self-reliance, which will grow with your years and your availed-of opportunities. You will find that there is still much to learn; that what you have hitherto studied as general principles require many elastic adaptations when applied to particular cases; but, in applying these, you will be building up a superstructure of experience and skill which will swell into constantly increasing proportions as you proceed with your work. You will find the richest fields for investigation, views that the most assiduous of your predecessors have not even touched, and precious gems waiting to be culled by skilled and tireless workers. You will learn, however, that your position is not without its drawbacks. True merit is not always speedily recognized, and you may at times be shocked to see that hoary quackery, or even that which is young and aggressive, has left you behind in the race for popular support, and the question may obtrude itself, whether, after all, you have laid out your time and means to the best account. Permit one who has matriculated into this school a few years in advance of you, to offer a few words of counsel and encouragement.

First, then, never lapse into the idea that you have finished your studies, and that you can now afford to lie on your oars and be carried by the current to the haven of success. Keep it ever in mind that you have but graduated from one school into another, in which you must continue your curriculum with undiminished ardor if you would excel. Nor will a few months or years bring you any nearer to that point beyond which progress will be impossible. You will find that constant and endless gradations await you; that every step gained but gives you a vantage-ground for the next; and that even with old age "the patriarch pupil must be learning still, and dying leave his lesson half-unlearned."

And yet, gentlemen, this day marks a most important turning

point in your lives. Hitherto you have worked entirely under the direction of others, you have been engaged in laying broad and sound foundations on a solid base, you have been forging and furbishing the weapons which you are to wield in the warfare of life. Now your work must be spontaneous and independent, your solid superstructure must be built up, your battle with disease and death must be a daily and earnest conflict. Now will tell the sound training through which you have passed. Now you can appreciate, not simply a cluster of outward symptoms as would the simple empiric, but, tracing effect to cause, you can see in the abnormality of the eye indications of particular cerebral lesions; in certain nervous disorders, results of digestive, urinary, hepatic, or eliminatory troubles; in certain skin eruptions, evidence of dyspepsia, hepatic torpor, lack of traumatosis, or of kidney excretion. From different altered conditions of the urine you can correctly infer disease of the kidneys, of the liver, of the lungs, of the brain, or of the loins. I might add indefinitely to this list, but these will suffice to point my statement that in the region of therapeutics "knowledge is power," and that that man whose practice has the most solid basis of *science*, or, in other words, of *knowledge*, is the man whose labors will be crowned with the most abundant success. It will take time to root out the ignorant empiric, but if you are true to your scientific foundations, and daily add a few more blocks to the imperishable structure, you will raise a name which all men will see and approve; you will be an honor to yourselves, to your *Alma Mater*, and to the country of your choice.

At the present moment our common profession is perhaps more highly appreciated in America than it has been at any time in the past. Men begin to recognize that the veterinarian is not a mere dispenser and administrator of drugs, nor a simple wielder of the surgeon's knife, but that he is in the highest sense a sanitarian. Here, gentlemen, we have already accomplished much. We can point with pride to the hundreds of millions that have been saved to each of the countries of Western Europe by the control and extinction of animal pestilences. Even America can testify of this work, and Massachusetts and Connecticut are

bright examples of its efficiency. Again and again have these States stamped out that bovine plague which is of all others the most insidious and destructive, that which, by reason of its prolonged incubation, literally "walketh in darkness," and, in an hour and place that no man feareth, claimeth its victims.

This plague is that which is now most prominently before the public and the veterinary profession in this country, and you will forgive me if I detain you by a few words on the subject. We have heard from men called veterinarians that this disease need create no alarm, that it exists only sporadically, and that there is no need for all the hue and cry that has been got up on the subject; for it is quite amenable to treatment, and can be put a stop to by inoculation! I do not so estimate the instructions you have received, as to suppose that any of you could be guilty of such assertions, but the country and the world have so much at stake in this matter, and such statements are so pre-eminently dangerous, that, until the land has been purged of this foreign "abomination of desolation," we can never too constantly nor too strongly condemn all attempts to belittle its baneful tendencies.

In answer to the charge that the contagious lung disease of cattle is not a source of danger, need I refer to the thousands of millions which it has carried off on the continent of Europe, or to the hundreds of millions which it has swept from the small island of Great Britain? It bears but a small figure in history, but therein lies its strength and the enormity of its power for evil. Cattle plagues have always spread from Eastern Europe on the occurrence of every great continental war. Wherever the fatal rinderpest carried swift destruction over the herds, killing off all the susceptible in a few days or weeks, it was followed by the slow, insidious, and masked lung fever, which numbered its victims by twos and threes at intervals of weeks or months, but, unlike its prompt and coverless predecessor, continued to hold its sway for years, and even decades, and proved in the end by far the more disastrous of the two. This is not the army that faces us boldly in the open plain and grapples with us in an equal warfare, but rather the designer of the masked fort, the unseen

ambush, and the charged mine. It is not the line-of-battle-ship, pouring forth her whole broadsides of flame and shot, but the deadly torpedo, pregnant with disaster, but hidden under the deceitful calm of the smooth waters.

The disease is not epidemic, forsooth, when the single stable at Blissville has furnished its suffering animals by fifties; when scarcely a cow-stable in New York or Brooklyn can present a clean bill of health for the past year; when the malady prevails most extensively in six different States; and when, in spite of a current of cattle traffic strongly opposed to its progress, it has eaten its way for three hundred miles into the heart of the country, and is to-day, more virulent if possible, at the extreme limits of this area than at the point from which it started. I wonder what in the judgment of the objectors would constitute an epizootic! I can understand how stockholders who come near to the subject, or the general public who have not studied the reproduction and rapid increase of specific disease-poisons in the systems of the sick, should clamor for a cure, and attach importance to certain percentage of recoveries. But that men who have studied the laws of contagion and of the propagation of epizootics, should lend themselves to belittle a most insidious and fatal epizootic, which is itself an exotic, is almost incredible.

The susceptible ox inspires the imponderable particles floating in the air of an infected shed, and these particles go on multiplying for weeks and months, and float forth with every breath expired from the lungs; hour by hour and day by day does this go on, and finally when the victim succumbs, its respiratory organs are infiltrated with 20, 30, or 40 pounds of virus, the product of the germs in the original inhalation, that were so infinitesimal that modern physics has no balance delicate enough to weigh them. Those of you who have a taste for figures may amuse yourselves with an approximate computation of the possibilities of infection from one such case of sickness. If we did not start with the imponderables, but were to allow each animal a full $\frac{1}{100}$ grain of infecting material, and if all the products of our sick animals could be utilized for the infection of others, half the cattle of these United States might be contaminated from one

original sufferer. This, of course, is not really practicable. Yet it is instructive to let the mind dwell for an instant on the amount of virus produced in the diseased system, and the quantity necessary to infect a healthy organism. It gives us to realize how dangerous is the existence for even a single hour of a beast in the active stages of the disease, how perilous the lodgment of this poison in dry buildings where it can be preserved, and how full of hazard the importation of cattle from an infected country.

With some diseases that inspire greater dread the danger is incomparably less. A cow infected at New York with rinder pest or apthous fever, might be sent out to Kansas or Texas, but she would show sickness on arrival, and as the disease would show itself, after an equal interval, in the herd in which she was placed, these would imperatively call for seclusion, and would almost certainly obtain it, so that neighboring stock would be preserved. But let the contagious lung fever be similarly carried in the body of an animal, and the infected beast will herd with the native cattle for a whole month before anything is noticed amiss, and for another month the illness will show in the infected animal only. Meanwhile no precautions will be taken, so that half the herd may be infected before any danger is suspected. During the interval, by mingling of the infected with neighboring herds, the disease is likely to be spread, and if this once takes place on the unfenced cattle ranges, it will follow its own course in spite of any attempted restraint. Of this we have several striking examples. The great herds of the nomadic Tartars, grazing in common on the open steppes of Russia, have been afflicted with this, as with other animal plagues, from time immemorial. The numberless herds of the Australian squatters have suffered similarly since 1859, and the cattle of the Cape of Good Hope and Natal have been affected since 1854. Strenuous efforts have been made to stamp the infection from each of these countries, but the facilities for contagion are too great to allow of success; and so it will be with us, should we permit the disease to gain our open stock ranges. In a country like ours, where the disease is more seen but as the result of contagion from a pre-existing case of sickness, the presence of even one

animal that is propagating the virus is a danger of the gravest kind.

The manifest remedy is to extirpate the poison. Now, as practiced over six different States, in all sorts of buildings and fields, and among all sorts of people, no system of quarantining and disinfecting of the sick can ever prove perfectly efficient. It is besides so expensive that a destruction of the infected herd and the payment of an indemnity by the State is far more economical. The system of killing the sick, avoids all danger of the diffusion of the disease, or of laying up the poison for future outbreaks, and it is that which has been proved in all countries to be the only successful course with fatal contagious diseases of animals that are not native to the soil.

Inoculation, like treatment, or like separation and disinfection, has never thoroughly eradicated this disease from any country. Belgium, Holland, England, France, Austria, New York and New Jersey, are illustrative examples. It lessens the losses in the individual herd, as would sound medical treatment, but it multiplies the poison indefinitely in the system of every inoculated animal, lodges it in the buildings and widens the area of infection. It lops off the terminal twigs of this mighty upas, but fails to strike the roots, and in place of killing it, gives strength and vigor for renewed growth. The man who practices inoculation or advocates it, contributes to the preservation and propagation of the disease, helps its extension to our western herds, and does his part towards a general infection, and the paralysis and ruin of our mighty and growing live stock interest. More, in this State the operation brings condemnation upon the inoculated animals, for they must now be considered as infected and subject to be slaughtered under the law.

As with the *lung fever*, so with other fatal animal contagions, such as rinderpest, bovine variola, swine plague, glanders, &c. Veterinary sanitary science has a great work to accomplish and bright laurels to win. She has but to go in and conquer. Besides the field of specific disease-poisons, she has to contend with an extended domain of parasiticism, and many of the parasites of the lower animals are equally inimical to man, so that this is one of

the many points at which we must clasp hands with the sister profession of medicine. We find for example, that man and animal reciprocate in supporting the *Tænia Solium*, *Tænia mediocamel-latta*, *Echinococcus*, *Bothriocephalus*, *Strougglus*, *Gigas*, *Trico-cephalus dispar*, the *Trichinae*, the *Ascaris Mystax*, the *Fasciola Hepatica*, and various *Acarina*, *Ixodus* and *Æstridæ*. Again among vegetable parasites they reciprocate in entertaining various fungi and mycozyrns, *Oidium*, *Tricophyton*, *Achorion*, *Bacillus*, &c. To meet these with sound preventative measures the physi-cian and veterinarian must work hand in hand, and cut off the parasite at all stages of its life. Another and still larger body of parasites find their hosts in widely different genera of animals, or even in vegetables, while some spend a portion of their lives in water or other inorganic media, so that in contending with these we must not only extend our observation to feral animals, but also to botany, geology, watershed, drainage, and indeed to the whole environment, if we would have our labors crowned with success. The field extends in every direction as we contemplate it, and grand, noble and economic achievements await accomplishment in many different directions; labors that will crown the unselfish worker with lasting honor.

But one thing at a time. Let veterinarians unite in wise counsel and sound work for the extermination of the contagious lung fever, and they will conquer a name and a status which the profession in this country has never attained. They will thus accomplish incomparably more than can ever be reached in the way of legislation. They will gain an esteem and trust from the people that will bring forth future harvests of even richer fruit-age and more abundant honor. The extinction of the exotic lung fever in America will open the way for the extermination of the prevalent fever of swine, and to the narrow restriction, if not to the obliteration of the glanders and farcy, of rabies, of malignant anthrax, of trichinosis, and of other forms of par-asitism.

We can even hope to render essential service to the sanitarian of the medical profession, for as all animal contagia are closely related, and to a large extent subject to similiar laws, our triumphs

will strengthen the hands of the sanitary physician, and serve to create a public spirit which will demand as a right the exclusion of small-pox, plague, yellow fever and other exotic contagia from our shores.

There are great possibilities before us, but they can only become realities if we prove ourselves equal to the work. To do this, we must be sound in professional knowledge, in the objects we aim at, and in integrity. To be an accomplished veterinarian is much, but to be an honorable man is much more. Fail here, and all your talents are worthless, and too often worse. You are even condemned in the court of your own conscience, and how can you hope for the confidence of the wise and good. Moral nobility alone will stand before God and man. Moral obliquity in a man, or in a profession, will sooner or later lead to ruin. Transgression of law will ever bring its punishment. I cannot touch the flame without getting burned; I cannot swallow atropia without being poisoned. But these may be done involuntarily; and in the absence of all guilty intention the harm is physical, and will end with physical results. But when we sin against light; when we stain our conscience by a wrong act done wilfully and in full knowledge of the evil, we undermine the basis of all honor and nobility, and take the first step into a moral decay that will forbid all future rise to worth or excellence.

A poet, who had looked deeply into the heart and life of humanity, says "An honest man's the noblest work of God." Here at the threshold of life, while full of youthful buoyancy of hope and vigor, in the strength of your early manhood, take up the standard of virtue and truth, and you will find it conducive to all sound material advancement, and, to what is much more valuable, to the possession of a name void of offence before God and man.

DIE AUGENBLENNORRHOE DER PFERDE UND IHRE FORMEN*.

VON FR. BLAZEKOVIC.

Translated from the Deutsche Zeitschrift für Thiermedizin. Vol. 4, p. 429.

The worse than embryological condition of veterinary ophthalmology must be my excuse for offering to our readers an almost complete translation of the paper in question, incomplete and wanting in exact micro-patho-anatomy as it is, for, as the drowning man grasps at a passing straw to save his life, so must we grasp every waif of knowledge which comes in our path, in the hope that an accumulation of such may end not only in a gradual completion of our knowledge, but may incite others, not to seek our literature and give us compilations of weekly errors and superstitions, but to endeavor to add some new facts by genuine original research.

We long to see the day when "our Review" shall contain contributions worthy of translation and recognition in other countries and among mediciners. Alas, when will the day come? Yet we have no reason to complain, for about all the matter of any scientific value in the *Veterinary Journal*, Britain's leading review, is like our own, purloined from continental workers. We have had a perfect surfeit of "transverse presentations," regular and irregular strangles and colics, of tetanus which ran out, and all such nonsense.

The author of the above has been in his present position in Russia for about six years, and on entering upon his duties received especial orders from the authorities to give every attention to a peculiar and lethal opthalmic disease which caused immense pecuniary losses to breeders and horse owners in the district; he says he carefully studied all accessible veterinary works upon

* The Blennorrhoe of the eyes of the horse and of its forms.

ophthalmic equine diseases, and then gave a long time to the serious study of medical works on the same subject, but that for several years the disease not only baffled his endeavors at its investigation, but treatment as well, and that only after having given to it the most exacting study, by observation and experiment, did he finally come to a correct knowledge of its ens, and attain success in its treatment. The disease is really not new, and many a practitioner will easily recognize it, as he reads the following, but it has been, as is too often the case, mystified, and rendered obscure, by the practice of veterinary writers—not investigators—of summing up everything under that wonderful, yet meaningless cognomen, “Ophthalmia.”

The disease assumes in two forms, which may appear ontogenitically, or concomitantly, viz.: “Blepharoblennorrhœ and Ophthalmoblennorrhœ; in the first case it is limited to the conjunctiva palpebrarum, and the second complicates that organ in its entirety. Blennorrhœ ætymologically means a flow of mucous-like fluid (“Schleimfluss”—Deutsch). Pathologically the word is used to indicate an abnormal secretion, both quantitative and qualitative, of a viscid fluid from the surface of a diseased mucosa, as the result of inflammation. The surface of the mucosa suffers changes according to the textural changes produced, and according to the same secretes a serous like, mucoid-hæmorrhagic, purulent or purely mucous secrete. Blennorrhœ of the eyes is accordingly a pathic condition of the same, by which is secreted a fluid, having more or less of the above characteristics.

Resembling all mucosa-affections, the blennorrhœ of the eyes finds itself anticipated by a simple catarrh; yet the terminal results of the two disturbances are essentially different, and have only this in common, that under circumstances unfavorable to its course a simple conjunctival catarrh may terminate in blennorrhœ, although in such cases it is illusory to endeavor to draw the line of demarcation between the proto and deuteropathic process. Yet it is very easy to distinguish between a simple catarrhal conjunctiva from blennorrhœ, in that the secreted products of the latter find the genesis in profound paraneurymatous conjunctival disturbances, involving not only that organ, but the subcon-

conjunctival tissues and bound with danger to the entire eye, while the catarrhal process are of a simple inflammatory and superficial character. It is absolutely necessary, in considering the disturbances in question, to bear this differentiation sharply in mind, as the same is of essential diagnostic value, and because it plays an ætiological role in reference to blennorrhœ, for as said, under untoward circumstances the catarrh may terminate in the much more severe and lethal process. Whoever has seen and recognized the difference in both processes will scarcely find himself in a condition to make an erroneous diagnosis.

The blennorrhœ is essentially characterized by its acute eruption, which either succeeds to a highly developed inflammation resulting in an extremely profuse exudation of a thick purulent mass with complications of the conjunctiva and the adjoining tissues, formation of bullæ, clouding of the cornea, and lacrimal fluid, hæmorrhage, finally gangrenous excoriations of the cornea, and swelling of its parenchym, ending in rupture of the same, and finally in loss of the eye, or it first appears after the ætiological moment or momenta, whatever their nature may be, have been at work some hours, in seldom cases some days, followed by a fluido-cellulod exudate in the conjunctiva, leading to further complications with a more or less fluido-purulent character. This process remains either limited to the conjunctiva palpebrum and the tissues of the lids, or extends over the entire conjunctiva, occasioning finally inflammation of the adjoining tissues. This variability in the retention of the disturbances gives rise to the two forms which the disease presents to us, viz.: Blepharoblennorrhœ and ophthalmoblennorrhœ. A third form, the granulous affection of the lids, is only a conclusion following either of the above forms. The inflammatory character of these forms is with regard to the anatomic processes partly exudative, partly purulent and ulcerous, when the disturbance is more intense, degenerative and productive disturbance in the form of the above mentioned grana come to pass. The terminations of the diseases are very variable, and when the therapeutic interferences are irrational, ends in most cases with loss of sight, let it be as a consequence of the excessive grade of the inflammation and the

above-mentioned disturbances, or as a consequence of numerous complications, and consequential disturbances, as opacity of the cornea, malformation, cataract, etc.

ÆTIOLOGIE.

The most difficult part of my task is to define the ætiological momenta of this disease, and to bring them in unison with the ens of the same. I have already sought to show that the inflammatory forms of this disease are spontaneous [That is, of unknown origin.—TRANS.] and virulent, according to the action of the causal influences.

It must be emphasized that the disease appears sporadically and as an enzootic. With regard to the latter, the chief factors which influence the ætiological momenta are, aside from a prevailing disease, constitution, climatic and telluric influences, which contribute not a little to the genesis and support of the enzootic. Influences of the most variable nature to which horses are exposed, are in condition, by concomitant action, to bring about such affection of the conjunctivæ. Local evils, unfavorable telluric conditions, poor stabling, render numerous appearances of the disease possible; the enzootic character finds support in poor food and the action of climatic influences. In this regard, the change in the seasons assumes a prominent place, as I observed very frequently in early spring and late fall that the disease appeared under such circumstances, and at such territorial condition, that it was impossible to favor ideas with regard to reciprocal infection; while at other times the disease could be only described as sporadic in its character. Again, it appeared under the influence of most unimportant conditions of the weather, such as wind and dryness, with as extreme violence as any other devastating pest. The “virous” character of the disease had at times a subordinate importance for its enzootic extension. I wish to place extreme emphasis on its “*virous*,” and not its contagious, character, for, in these cases, *virus* and contagium are to be most strongly distinguished, as this point is not, perhaps, so sharply prominent in any disease capable of dissemination per infection, as by the disease in question; for the

virus first receives its activity as an infectious element when it has suffered certain metamorphoses in the diseased part, or has favored the development of certain zymotic elements or fungi in the same, while contagium acts directly, independent of the grade of development, or the progression of the disturbance from which it proceeds, and it is not necessary that a certain period of development of the same be attained before it becomes active. Its action is not limited by any period of development, let the infection's-centre come from whence it will.

This disease is without doubt infectious, yet, according to my observation and experience, it contains no specific contagium; but the disease must pass through certain phases before its secrete attains its infectious properties; *hence, the disease is not infectious in all stages of its course.* The infectious nature of the disease is accordingly virulent, but, as the infectious elements are not of a transportable character, the pest-like extension of the disease is much more insignificant than by pests characterized by easily transportable infectious elements.

A limitation to the extension of this disease by means of its infectious elements results from the circumstance that the activity of these elements is limited to a period conformable to the pathic processes. This, with the previously considered causes, may well be *causa sufficiens* that the disease does not assume an epizootic, but always retains an enzootic character, even though at times presenting itself as a virtual pest.

In many medical works on ophthalmology we find various remarks over the extension which such diseases at times acquire by means of infection, yet we do not find any author ascribing to the infectious elements a highly portable character. The extension finds its best explanation in uncleanness, especially among the working classes; while ophthalmologues frequently give evidence of one eye becoming infected by transmission of the infectious elements at the hands of the person diseased. I have been unable to constitute any such case, by the disease in question, among horses. In all cases, only one eye was primarily diseased, and, as said, an infection of the other by infectious elements from the diseased has not come to my observation. If both eyes were

diseased, it was a coeval infection. The infection by virus-pollution is very seldom by animals, as I have repeatedly had occasion to observe that, where a diseased and non-diseased animal were worked together infection seldom took place—so seldom that at first I could not prevail on myself to believe an infection possible; repeated experiment has however finally convinced me that the latter is possible. These inoculations have proven to me the “virulent” character of the infectious elements, and have also shown that in many cases they remain entirely inactive. The majority of cases must be traced to a genuine or spontaneous [That is, unknown.—TRANS.] cause, out of which develops the virulent character of the elements produced by the disease-processes. Accidental causes were not observable, yet insignificant irritations appear to have ability to generate the disease. The ætiology of this disease still remains much in the dark, and gives abundant opportunity for further research.

[*To be continued.*]

ATROPHY OF THE PLANTAR CUSHION.

BY G. CHENIER. TRANSLATED BY A. LIAUTARD, M.D., V.S.

(*Continued from page 504.*)

V.

TREATMENT OF THE ATROPHY OF THE PLANTAR CUSHION, AND OF ITS SEQUELÆ.

Numerous are the inventors who pretend to give the foot back its normal shape. Poor, crippled horse, feet doctors are plenty.

Nombreux sont les inventeurs qui ont la prétention de restituer au pied sa forme normale. Pauvre cheval estropié, il ne manque pas de pédicures!
—L. GOYAU.

To complete the question of the treatment of the plantar cushion and its sequelæ, it would be necessary to pass in review,

with commentaries, all the treatments recommended against these numerous diseases. But this would have more an historical interest than a true practical benefit. If, indeed, one looks over the publications on that subject, he would be surprised at the number and varieties of these treatments. Specially would this be in relation to the treatment of hoof-bound proper and of quarter-crack, where the proposed remedies—all more or less certain—are so numerous and varied. For instance, for quarter-crack alone we know of no less than fifteen different modes, from the putty of Defay's and the inoffensive oil of cade, to the lateral fissures, which, by the way, have no other effects than to add two new cracks to the one already existing, and thus facilitate the movement of contraction. For the hoof-bound proper, there is a full therapeutical arsenal.

All of which shows well the difference of opinions as to the nature of these diseases; evidently, if that was well decided, methods of treatment entirely contradictory to each other would not have been recommended.

A.—GENERAL INDICATIONS.

The art of the horse-shoer is to try to preserve the hoof in its integrity of form, so essential to that of its function.

L'art du maréchal doit se proposer pour but à atteindre de conserver au sabot l'intégrité de sa forme si essentiellement liée à celle de sa fonction.—
H. BOULRY.

The opinion which we have expressed in these pages gives an idea of the solution, to which we will give the preference. Thus, we put aside, from principle, all the indications which have not for objection to render to the plantar cushion its vital properties, resting our opinion upon the idea that the participation of the frog at rest is the condition, *sine quâ non*, of the integrity of the foot.

Two indications rest naturally on our thesis: 1. Prevent the atrophy of the plantar cushion; 2. Render to that organ its vitality, if already atrophied.

The preservative *by excellence*, that which is above all others,

is to respect the frog while shoeing. This organ seems to say, *Noli me tangere!* And, perhaps, was the veterinarian right, who, according to Mr. Merche, had placed at the door of the shoer shop a sign: "Do not touch the frog!" This recommendation could not be insisted on too much. Do we not often see our blacksmiths paring the frog to excess?

If the contraction of the wall is already existing, if the frog has already undergone a process of atrophy, the curative treatment must be looked for. Remove the shoes and turn him out in soft damp fields, where the foot can sink and the plantar surface come down to rest. This may prove useful even in yet well marked hoof-bound. This fact was already known by Ruini, in the 17th century.

"Ploughing on soft ground, with thin, light slipper, allows to the foot the contact of the damp ground, and gives very satisfactory results" (L. Goyau).

The shoeing to be used varies with the intensity of the affection. If at the beginning of the disease, the *ferrure à lunette* is *sufficient*; later, the bar shoe.

The benefits of the bar shoe are not ignored by any one. Many employ it and are satisfied with it. Goyau says of it: "A quick and great spreading of the foot is obtained, if its application is preceded by the thinning of the contracted wall. * * * With it, the animal is kept at work, and the hoof grows down with quite considerable dimensions." (The paring of the wall seems to us useless.)

If the frog is too atrophied, and the bar of the shoe cannot rest on it, it is necessary to have recourse to an artificial frog of gutta-percha, which allows that pressure of the bar of the shoe to take place. MM. Jeannin and Dupon were the first to recommend it—the former in 1862, and the latter in 1868. Mr. Goyau modified their mode of using it, by placing an entire cover of gutta-percha over the whole plantar surface of the foot and placing the shoe over it, after having pared the foot, the frog well cleaned, and the bars thinned carefully.

We operate as follows: We clean the frog, pare the wall and the sole slightly. If the frog is thrushy, we dress it with Ægyp-

tiacum ointment. The shoe ready, we cover the posterior part of the foot with gutta-percha, softened in warm water. We mould it well upon the foot, and then nail the shoe on. The foot cooled off, the gutta percha hardens. When the foot is down the frog must rest and press on the bar of the shoe. The next day we trim off the excess of gutta percha and leave the foot alone, which, sometimes for forty days, needs no other attention.

The animal can be kept at work, even if very lame, but then at slow walking work.

B.—SPECIAL INDICATIONS.

1. Symptomatic quarter-crack:

All shoes which have for effect to open artificially the heels will cure quarter-cracks, but none will prevent their return. To obtain this, the first indication is to stimulate the vitality of the plantar cushion. To this effect, the bar shoe is the best application to be used.

If the solution is superficial, there is no special indication. If it is deep, the thinning process may be found beneficial. This, in stimulating the latent action of the podophyllous tissue, will hasten the cure, though it presents the objection of rendering the animal useless, no matter for how short time it may be.

2. Symptomatic corn:

Nothing particular to notice. After paring carefully the corn, it is again the bar shoe that we employ. This corn being generally the first effect of hoof-bound, it is rare to find that the frog is so atrophied that it cannot rest on the bar of the shoe.

Though Lafosse recommended the short-branched shoe, we prefer the bar shoe.

3. Navicular disease:

If we had navicular disease to treat, we would use the same treatment as in hoof-bound, and we feel satisfied that it would prove as satisfactory "as the setons in the shoulders, the administration of iodine internally, or the seton through the plantar cushion."

EDITORIAL.

OUR THIRD VOLUME.

With this number the *American Veterinary Review* enters on its third year.

Started under the patronage of the United States Veterinary Medical Association, it was not without fear that the editorial staff assumed the duty of issuing this organ of veterinary science in the United States, but notwithstanding all the obstacles which had to be overcome, the low standing of the profession in the country, the small number of veterinarians likely to support it, and the ever ready slurs thrown against it by unworthy so-called members of the profession, it has filled one of the great needs of the American veterinary practitioner, and is to-day presenting itself fearless of any danger as to its future life.

The second volume has been much more interesting than the first, a larger number of pages, containing more elaborate articles have been offered to our readers, and while we offer our contributors our sincere thanks for the kind assistance they have given us, we hope they will continue to help us in making the *Review* the true and worthy representative of the veterinary profession in America.

AMERICAN VETERINARY COLLEGE.

The winter session of the American Veterinary College is closed, and the Faculty is now engaged in the delivery of the lectures of the spring session. The closing exercises were an opportunity for the people of New York city and surroundings to show the interest taken in the welfare of the school and the appreciation of the work done by that young institution. It is but four years since the American Veterinary College has been organized, and yet, while the class proved then very small, the

matriculation book for the session 1878-9 registered no less than forty-two students, out of which a graduating class of eight were awarded the degree of Doctor of Veterinary Surgery. The Alumni Association counts to-day thirty-four members spread in different parts of the country, and endeavoring to elevate the profession by careful fulfilment of their duties, undermining slowly perhaps, but surely, the work and influence of the empiric and of the impostor, who cannot help but see that their days are counted.

PLEURO-PNEUMONIA.

The greater part of this number of the *Review* is made up of material relating to pleuro-pneumonia. This we do, not only for the benefit of our American friends, but also for our foreign readers. England is no doubt desirous to know all she can learn relating to the existence of that disease in this country; and certainly English veterinarians are anxious to read of the measures which our state governments will take to destroy the bad effect produced by the neglect of our general government. If our cattle trade has been threatened, we fear that it is the fault of our government, which for years has overlooked the advices which it receives from competent veterinary authorities; and we cannot help looking at the position taken by England as a blessing for the acknowledgment of veterinary science in America, and of its appreciation by the proper authorities.

New York, with General Patrick and Professor James Law, with their body of veterinary assistants, are at work, and have destroyed the true centre of infection of Long Island in annihilating the Blissville establishment, in regulating the quarantine, the traveling of cattle, and somewhat the slaughter of animals.

New Jersey has appointed Colonel Sterling, with Professor A. A. Holcombe, D.V.S., and soon the machinery of stamping out will be in good running order; and this will be most gratifying to hear by many, as it is known that in that little State peculiar theories relating to the disease have been publicly advanced, and

somewhat admitted by the laity, and also that inoculation had obtained a firm foothold as a means of eradicating the disease.

Connecticut is on the alert, and by careful quarantine her Cattle Commissioners are keeping the disease within bounds.

Pennsylvania is also at work. The consulting Veterinary Surgeon to the Board of Agriculture informs us that pleuro-pneumonia prevails in Philadelphia and vicinity. Steps are already recommended, and we understand no half-way measures will be taken.

The reports of the existence of pleuro-pneumonia in the stock yards of Chicago proved to be a false alarm, according to Dr. N. H. Paren, the veterinary authority, and nothing but the result of an over excited mind, which on cooler investigation altered its first diagnosis.

The announcement of its existence in Rhode Island has been professionally corrected.

By official information we hear through the Cattle Commissioners of Massachusetts that, "Thus far, in spite of the stir made in the matter, no case of pleuro-pneumonia or rinderpest has been found among cattle."

Everything therefore looks well, and though it may take us a few months before we are entirely rid of pleuro-pneumonia, there is no doubt but that it will be stamped out in the few Eastern States where it exists, that it will not be allowed to cross the mountains westward, and that therefore the restrictions of England will have to be cancelled in a short time. Once relieved from this great danger, we hope our government will see the propriety of keeping a close watch against the possibility of its reimportation.

PLEURO-PNEUMONIA.

REPORT OF THE CATTLE COMMISSIONERS OF MASSACHUSETTS RELATING TO PLEURO-PNEUMONIA IN 1863.

COMMONWEALTH OF MASSACHUSETTS.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

By an Act of your honorable bodies, approved February, 1862, the present Commission on contagious diseases of cattle was established.

On the 25th of the same month the following named persons were appointed by the Governor and Council to constitute the Board of Commissioners, viz: E. F. Thayer, of Newton; H. L. Sabine, Williamstown; and James Ritchie, of Roxbury.

Two of these persons were without experience in regard to the subject matter committed to their charge, and inclined to receive with great caution the evidence of the existence in this country of a contagious lung disease among cattle. The State had already expended large sums of money, and great losses had been incurred by individuals, for the purpose of purging our cattle herds of the disease termed pleuro-pneumonia. In the community there was a divided sentiment in regard to the policy pursued by the previous Board of Commissioners in relation to this matter. Many ridiculed the whole proceedings, and some of the members of your honorable bodies were much inclined to doubt the expediency of establishing a new Board of Commissioners, with such vast powers as were conferred by the Acts of April and June, 1860. In view of these facts it was decided by the Commissioners, at the outset, to take nothing for granted, but to commence *de novo* and proceed with care and discrimination in the examination of all cases which might be presented for consideration.

A representation had been made in print by a committee of the State Board of Agriculture, about the middle of February, to the effect that the disease called pleuro-pneumonia had made its appearance in the county of Norfolk, and on the 1st of March a communication was received from the selectmen of the town of Milton, calling upon the Commissioners to visit the herd of William A. Houghton, of that town. On the first day of January, 1862, this herd consisted of eight cows and two Jersey heifers. The first sickness in a cow of this stock was noticed about the middle of the same month. This animal had been in Mr. Houghton's possession four years. She was kept with the other stock until the 8th of February, and was then transferred to the barn of Mr. Isaac Houghton in Dorchester, where no other cattle were kept. This cow continued sick, becoming very much emaciated, and on the 10th of March, was killed by order of the Commissioners. On examination both lungs were found badly diseased; the right lung contained a hard lump weighing about four pounds, firmly encased. On cutting open the covering a quantity of very offensive matter appeared, sur-

rounding a piece of solidified lung in which the cells were distended, and the usually very thin membranous tissue was thickened to a quarter of an inch. The left lung exhibited similar developments, with the exception that the cyst was smaller. Mr. Hatfield, the butcher, declared that among all the cattle he had killed, some of which had been variously diseased, he had never seen anything resembling what was presented in this case. A portion of the lungs of this animal was taken to the State House and exhibited to the Governor and Council and to many members of the Legislature. On inquiry of Mr. William A. Houghton it was ascertained that another of his stock was sold in January, in poor condition, to a German butcher engaged in the manufacture of Bologna sausages. Still another died in February, before notice was given to the select men. This notice was served on the 13th of that month, and on the following day the authorities took formal possession of the herd and had one of the cows killed, which was found to be diseased in her lungs in manner answering to the usual description of the malady termed pleuro-pneumonia. On the first visit of the Commissioners, March 1st, a cow that had taken neither food nor drink for six days was killed. On examination the right lung was found wholly diseased. The exudation had been excessive and the lung was firmly adherent to ribs and diaphragm. The left lung was in the main without disease, although exhibiting evident marks of having been overworked.

An examination into the origin of the disease in William A. Houghton's herd, and into that of another herd similarly infected in the town of Quincy, a full account of which will be found in a subsequent part of this Report, induced the Commissioners, in view of the experience of other years and as a measure of proper precaution, to act on the presumption that the disease was infectious. They accordingly ordered the entire isolation of all herds of cattle which, by any possibility, might have had any contact with one of the animals supposed to have been infected, and prohibited the buying or selling of cattle by the owners of such herds.

On the 11th of March, the Commissioners submitted a partial report to the House of Representatives, in response to a resolution of that branch of the government, in which the hope was expressed that the disease would be very limited in extent. Subsequently, however, cases were multiplied; and for some time it was feared that the infection might have reached every portion of the Commonwealth. The Commissioners were summoned in various directions, but in the main, ascertained that these requests were caused by cases which on examination presented no appearances like those developed in the examinations in Milton and Quincy. In one instance, in the town of Rutland, an ox died very suddenly. His yoke-fellow was sold to a neighboring farmer, and the ox to which this had been mated was taken sick and subsequently died. The lungs in these cases were examined. One was without disease in those organs, and the other presented a case of severe bronchial inflammation. In fact, in all the cases presented where no contact could be even inferred, not the slightest indication, like those of the disease termed pleuro-pneumonia, was exhibited.

About the first of April, from inquiries made at Brighton and Cambridge, it became known to the Commissioners that a disease of a peculiar nature had appeared in the herd of E. Welch, a milkman in South Boston. On examination it was ascertained that a cow which had been exposed in Dorchester, had been purchased and introduced into his herd about the 9th of January, and that sev-

eral of his cows had been taken sick. Accordingly his herd was isolated, but as in this and other instances, it appeared to the Commissioners that, in such situations, the isolation could not be perfectly secured, arrangements were made for the removal of the infected herds to some secure place, where the public would not be endangered, and where experimental knowledge might more readily be acquired as to the nature and progress of the disease. Accordingly the Commissioners took possession of a farm at Squantum, which was under lease to one O. C. Barnes, the owner of an infected herd; and all the herds which were then known to be infected, were removed thither in the night time. The buildings to which the cattle were removed were old and fully ventilated in every direction, but the disease soon took hold of the healthy animals, and when killed very few were found to have escaped the infection. A sick cow was purposely tied between two apparently perfectly healthy. These in the course of a few weeks became sick, while the cow in the middle became apparently better, but when killed was found badly diseased, the unhealthy portion of the lungs having become encased with a firm membranous covering.

Many members of the last Legislature visited Squantum, and were present when cattle were killed. They were all satisfied as to the peculiar character of the disease; and those who doubted when they went, returned convinced. In fact, there remained no longer room to doubt the infectious nature of the disease. Many animals fully exposed entirely escaped. Well fed milch cows rarely failed to take the disease. Bulls, oxen, heifers and poor cows were more commonly among the exempt. It does not appear that the disease is so infectious as the small-pox among human beings. It is, however, sufficiently so to be very alarming. As an approximation, it may be stated that twenty-five per cent. of an infected herd will die, fifty per cent. may recover so as in a measure to be healthy, but when killed will be found to have a portion of diseased lung fully encased and separate from the healthy portions, and twenty-five per cent. will come out in perfect condition.

One hundred and fifty-four cattle have died or been killed during the past ten months under suspicion of having been infected. Of these forty-four were cattle pastured on Long Island, killed for reasons hereinafter to be given. Of the remaining one hundred and ten, seventy-seven were diseased and thirty-three perfectly healthy. Contact was proved in all but one instance, which may be thus given.

Mr. William Walker, of Quincy, was at Squantum when diseased cattle were killed there. He examined closely portions of diseased lung and walked through the blood of the slain animals. He then rode home a mile and a half and went to the barn and fed his cattle. These became diseased. Two were sold to E. B. Taylor, and all but three out of his herd of twenty-one were found diseased. Another was sent to Long Island where forty-four cattle belonging to individuals in different towns were pastured. This cow was taken sick and when killed was found to be diseased with this peculiar form of disease. This affair caused great perplexity to the Commissioners. The cattle on the Island had all been exposed and yet they appeared perfectly healthy. It was decided to keep them on the Island until it was necessary to dispose of them for want of shelter. The owners were consulted and either they or their neighbors objected to their removal from the Island. Intelligent stock owners in various parts of the Commonwealth remonstrated against endangering the whole cattle of the State for

the sake of the comparatively insignificant sum of eight or nine hundred dollars. Accordingly the cattle were killed on the last week of November, and all found perfectly healthy. Had it not been done the community would have been full of apprehension. The law in relation to the disposal of exposed cattle found perfectly healthy was so worded that an insignificant amount was realized from the sale thereof.

The following concise statement will sufficiently explain the main features in the progress of the disease in this State during the past year.

In March, 1861, Mr. J. F. Eaton purchased a yoke of cattle of a person at Brighton who had the same day bought them of a driver from North Hampton, N. H., named Jonathan Filbrick. A gentleman in search of a pair of oxen had previously declined to take these on account of their unhealthy appearance. Soon after Mr. Eaton had put these cattle to work on his farm one became sick, then the other, then a bull stalled next to the oxen. All of these died of a loathsome disease. Very soon his cows, one after another, were attacked. Several died and some were killed to put them out of misery. Those that apparently recovered were afterwards found to have the disease encysted or covered over for a time. In August Mr. Eaton sold eight cows to Mr. John Holbrook, of Randolph, two of them at the low price of five dollars each. Finding it difficult to get these two home Mr. H. bargained with an Irishman to take two weary cattle on the road for the sum of ten dollars. The cash not being on hand, the verbal promise to pay was taken, but as one cow was nearly dead when the purchaser found her, and as the other died shortly after the purchase, only fifty cents were realized out of this shrewd bargain. The other six cows, after remaining a few days in a field with a cow and a calf previously belonging to Mr. Holbrook, were sold to Mr. Loring Tirrell, of Weymouth, for a sum less than that paid Eaton by Holbrook for them. Before reaching home Mr. Tirrell found that two of the cows were sick, and on his arrival he tied the two up in a barn with a cow he had kept for about a year to supply his family with milk. The three were afterwards turned out to pasture together, where they all died. Three of the remaining were killed for beef, and the remaining one was sold. The latter was traced out, bought and killed and found not diseased. This ended,—through the mere circumstance that this cow sold had not become infected,—the progress of the disease in that direction.

The cow which Mr. Holbrook had at the time the six before mentioned were in his pasture and which was never suspected until killed of being diseased, was sold to O. C. Barnes, of Squantum, who at that time had a milk herd of thirteen cows. Three of these were soon after sold for beef. In November one of his cows was taken sick and died. About the first of December, another was taken away by Fillbrook, the butcher, who saw the lungs of the one that died. Mr. Fillbrook had at that time in his barn thirty or more milch cows. The cow from Barnes', while on the way to the slaughter-house, accidentally went into the barn among these cows. When killed the lungs of this cow were found so diseased that the carcass was sent to Ward's factory. In a short time thereafter several of Mr. Fillbrook's cows became sick. He killed nearly all of them, and such as were healthy went for beef. Eight, however, of the carcasses could not be used and were sent to Ward's. Seven of O. C. Barnes' herd proved to be diseased. From this point the disease was carried in various directions, and was only stopped

by the destruction of ninety-three head of cattle, at an expense of \$3,000 to the State and a loss of as much more to individuals.

In June, 1861, Mr. J. F. Eaton, the same whose cattle trade involved the history just recited, purchased another pair of oxen and took them to his farm, where he kept them as far as possible from the rest of his herd, and from contact with his sick cows. After using them to get in his hay, he sold them in August to James Houghton, of Dorchester. In October one of Mr. Houghton's cows was taken sick, and one day on driving her out to take the air she fell dead. Several others were taken sick from time to time. One cow was driven from his place early in December to his brother's, William A. Houghton, of Milton. There she remained three weeks. In about two months Mr. William A. Houghton's herd became sick; several died and the rest were killed January 9. Mr. James Houghton sold a cow to E. Welch, of South Boston. In about a month she was taken sick, and in the following April Mr. Welch's whole herd perished, and nine out of the fourteen were found diseased with the peculiar lung disease called pleuro-pneumonia. In January Mr. Houghton sent the oxen and some cows to Brighton, but not getting the price he desired he transferred them to his farm in Grafton. On the 19th of March, two of the cows at Grafton were found sick in the acute stages of the disease, and one other in which the disease had evidently existed for months.

The nine cattle at this place were slaughtered on the same day, and among the rest the yoke of oxen sold by J. F. Eaton to James Houghton. One of these oxen was found to have no sign of disease in the lungs, and the other had only a small cyst not larger than a hen's egg, and was never previously suspected of being other than perfectly healthy.

It will be seen from the foregoing, that two animals, the Holbrook cow sold to Barnes, and the Eaton ox sold to James Houghton, neither of which were even suspected of being diseased, have brought thousands of dollars' expense upon the community and much loss and suffering to individuals, who in some instances have lost valuable milk routes, and in others the very means of procuring present subsistence. In view of these facts, the Commissioners suggest whether there is any safety in allowing any cattle to live that have ever been exposed to this disease. For the encouragement of those interested in neat stock, the Commissioners take pleasure in placing upon record the example of a large owner of cattle immediately adjoining the estate of Mr. J. F. Eaton. After Mr. Eaton's oxen died, this neighbor said to him, "If your bull standing next to the oxen is taken sick, I shall believe it is the pleuro;" and after the bull died, and even before, he took great precaution in regard to his cattle—employing a boy constantly while the cattle were in pasture to keep them from contact with Mr. Eaton's. He would not allow any of his neighbors' cattle to come into his yard, and as the result of his vigilance, he secured the entire exemption of his herd from the disease which had utterly swept off Mr. Eaton's herd of at least twenty-four cattle.

In view of the foregoing statements, it does not appear to the Commissioners worth their while, or of any advantage to the community, to enter upon an elaborate argument against the medical theory that lung diseases are not contagious, or against the physical theory that this disease is generated from local causes. They rely wholly upon the facts of its actual propagation.

It having been urged that in Brooklyn, N. Y., and Bordentown, N. J., the same disease existed, and that its origin could not be traced, the Commissioners deemed the subject of sufficient importance to warrant them in making a personal examination of its developments in those places. They visited Brooklyn, and examined the famous stables in Skillman street and elsewhere, and ascertained that the disease took off annually thirty per cent. of the cattle; that inoculation had been tried without perceptible advantage, and that the effects of the disease were such that the keeping of cattle in those places was fast becoming profitless. It appeared on investigation, that the theory of the self-producing character of the disease, or that it was generated in badly ventilated stables, was wholly without foundation; and the Commissioners were able to trace the whole disease in its entire course to one cow, brought over in a ship from England about twelve years since, and sold to a German, near South Ferry, Brooklyn. This cow was transferred to one of the herds in Skillman street, where the disease was never heard of before, and there it died; since which time it has not ceased to prevail there with more or less intensity.

A cow, sick with a very painful disease, was offered to us for examination, and on killing and opening her there were developed precisely the same appearances as were witnessed in those cattle killed by order of the Commissioners in Massachusetts.

In New Jersey, as in New York, the Commissioners had an opportunity for examining the lungs of diseased cattle, and with the same result. They also succeeded in tracing the disease in all cases to Philadelphia, to which place, according to general belief, it was brought by cattle from Holland.

The Commissioners feel that they have so managed this subject as to allay the apprehensions of our farmers, and yet they desire to state, that exemption from this great evil can only be purchased by eternal vigilance. We have little fear of it from Brooklyn or New Jersey, but there is danger of its approach by the way of Albany, N. Y., and we should recommend as a matter of common prudence that some commission be kept in existence ready to meet the malady at its first approach.

If New York, New Jersey and Pennsylvania would adopt similar measures to those in this State, it would be one of the most effective modes of securing the whole community against this disease, which, if allowed to prevail, would endanger all the neat stock in the country, and greatly deteriorate the most substantial food of the people. One pertinent fact may be stated here, viz: that a single cow imported into Australia with this disease shut up in her lungs, has imparted the same, by computation, to no less than 100,000 cattle.

In conclusion the Commissioners are satisfied,

1st. That this disease has never been generated in this country from local causes.

2d. That it is altogether an imported disease.

3d. That in general it is communicated by contact of breath.

4th. That it cannot be eradicated by treatment.

5th. That those cattle which apparently recover are the most dangerous, as they are liable at any time to come down with the disease a second time.

6th. That by care it may be prevented from extending from one herd to another.

The appropriation for the expenses of the commission was \$5,000. There have

been already audited and paid bills to the amount of about \$4,800. The estimated amount of bills not yet audited is \$900, making in all an expenditure of \$5,700, and leaving a deficiency of \$700, for which an appropriation is required. This amount is in addition to that paid by the several towns where the disease has existed.

It is due to Dr. E. F. Thayer, one of the members of this Board, to state that in addition to his other labors he has personally as veterinary surgeon examined the lungs of every animal that has died or been killed under suspicion of contagious disease, thus saving a large expense for veterinary services which otherwise must have been incurred. His associates would respectfully recommend an appropriation to pay him \$200 for his extra services.

Our thanks are given to the many farmers, drovers and veterinarians who have greatly aided us in our efforts to stay the progress of this disease.

Respectfully submitted.

JAMES RITCHIE,
E. F. THAYER,
HENRY L. SABINE,

Commissioners on Contagious Diseases of Cattle.

BOSTON, January 6, 1863.

PLEURO-PNEUMONIA IN NEW JERSEY.

BY J. C. CORLIES, D.V.S.

Since this dread malady has assumed such immense proportions, and engrossed so much attention from an interested public, we make bold to believe a brief sketch of its rise, history and progress in the State of New Jersey will not be uninteresting. Accurate data places the disease in Brooklyn, New York, as early as 1843, from where it was transmitted to Chatham, New Jersey, in 1846, and generally transferred through the northern counties of the state. There being a large traffic in cattle about this time between the two states, there is but little doubt that it was carried by such purchases in New York to various other points, and not a little of it can be traced to the importation of affected animals coming direct from Europe. Recent investigations prove that it has been steadily increasing ever since, until to-day we fear we have a widely diffused malady of no mean proportions, and one which involves no light task to eradicate. A

fortunate circumstance associated with its early advent into the state, is that it was first introduced by stock-raisers of intelligence and affluence, who, knowing its malignant character, grappled with it by practicing occision, thereby keeping it to a great extent in check. But being a subtle enemy who knows no bounds, it soon crept in among the animals of the lower classes, who depended largely upon the product of their cattle for their sustenance, and felt they could not afford to loose them; hence, whenever they found the malady among their stock, made haste to exchange them for other and healthy animals. Many unscrupulous persons took advantage of this circumstance to speculate in diseased animals, and often realized handsomely by dealing them off to the unsophisticated farmer who never saw or perhaps heard of the disease until the stern, stubborn fact of having it among his own cattle was staring him in the face. This fact demonstrates the necessity for early legislative action, the only means by which we may hope to effect its eradication. Many and various were the means employed to effect a cure, the cow leech reaping a rich harvest by the preparation and administration of his favorite nostrum, and it is not uncommon to-day to meet that gentleman with his *sure cure*, which may be purchased at the farmer's own figures. But they soon learned, after paying liberally for the lesson, that they had an incurable malady to contend with, and began looking around for something more substantial, which was claimed to be found in the much lauded but reprehensible prophylactic European practice of inoculation. Words fail to portray the amount of injury resulting from that practice. As inspector of cattle, it has been our duty for the past few days to investigate the existence of the disease in and about Newark, N. J., and there is scarcely a stable where it has been practiced that we do not find more or less lung lesions in consequence, rendering each inoculated animal a medium of contagion, from which the disease may be distransmitted. We feel it our duty to urge upon the Governor the necessity of taking some steps to prevent its further use. In 1861, the State Board of Agriculture becoming alive to the importance of the subject, appealed to the Legislature to take some action toward having it and

other bovine diseases investigated. With that object in view, a bill was passed appropriating \$1,500 for the purpose. It fell into the hands of the politicians, and was used to no purpose. Again, in 1867 a bill was passed conferring upon township committees the right to investigate, quarantine and slaughter all infected animals in certain districts, but there being no appropriation made, the bill was necessarily unconstitutional, and the committees not meeting with any encouragement from outside parties, but rather becoming unpopular, so far as we can learn, it was not in a single case enforced, and has remained upon the statute books as a dead letter ever since. The disease continuing to make rapid progress, in connection with the action of the New York Legislature, a heavy pressure was being brought to bear upon the Legislature by suffering stock-raisers, a bill was framed similar in its working to the New York bill. Under its provisions Colonel W. H. Sterling, of Plainfield, N. J., was appointed Cattle Commissioner. Notwithstanding the Commission has not yet got in regular working order, enough has been gained to warrant us in saying we are destined to find more of the malady than we were led to believe existed, and since inoculation has been practiced in this part so extensively, we may safely say many cases that would otherwise have escaped, will now have to be fitted for and disposed of to the butcher. Mild, chronic and what are termed vaccinated cases are the rule, while the acute are the exception.

CONDITION OF THE MILK IN COWS SUFFERING WITH PLEURO-PNEUMONIA.

By J. BLAKE WHITE, M.D., ASSISTANT SANITARY INSPECTOR.

Sanitary Bureau, Health Department, }
New York, Feb. 24, 1879. }

Walter D. F. Day, M.D., Sanitary Superintendent :

SIR: At the time of my official inspection of the cows confined in the stables connected with the distillery of Messrs. Gaff,

Fleishmann & Co., at Blissville, L. I., a sample of milk was obtained from each of two cows numbered among the "milkers," and submitted by me to microscopical and analytical examination.

The cows appeared fagged and emaciated, were affected with an incessant dry cough, respiration labored and abdominal, and upon pressure there was marked and extensive dullness over the right thorax. The dejections were loose, and showed evidences of gastric intestinal irritation. Dr. Liantard, the expert veterinary surgeon, who accompanied me, pronounced the cows afflicted with pleuro-pneumonia.

As I have already stated, the microscopical examination revealed the oil globules agglutinated into irregular granular masses, some pieces of epithelium and cells resembling those found in colosteam. The reaction of each sample of milk was decidedly acid. In appearance they were bluish and limpid; in taste insipid and slightly bitter.

I have the honor to submit the results of my analysis, performed in duplicate, of which the following is the average:

I. Temperature, 57° (Far.). Sp. Gr., 1032 Creammeter. 4 per cent. of cream by volume.

Milk.....	89.800
Fat.....	1.185
Sugar.....	4.180
Casine.....	4.165
Salts.....	670
	<hr/>
	100.000

II. Temperature, 62° (Far.) Sp. Gr., 1034 Creammeter. 5½ per cent. by volume.

Water.....	89.180
Fat.....	1.300
Sugar.....	4.520
Casine.....	4.345
Salts.....	.655
	<hr/>
	100.000

From the above results I have no hesitancy in pronouncing these samples of milk not only unwholesome, but in consequence of the very low percentage of fat, innutritious, and showing in every way what a depreciating effect unwholesome and insufficient food has upon this important secretion.

I think the above samples are a fair average of the milk yielded by cows penned and imperfectly nourished as those at the Blissville dairy.

I have already adduced facts to show that at this place every condition which is necessary for the maintenance of the health and lives of these unfortunate creatures are disregarded to a degree that might with just propriety excite our condemnation.

Not only should pity for these abused and wretched animals, so necessary and so useful to man, but also that highest humanity, the care for human life, demand that such disgusting establishments as these be forever abolished.

Respectfully submitted,

J. BLAKE WHITE, M.D.,

Assistant Sanitary Inspector.

PROFESSIONAL CORRECTION.

New York, 130 East 50th Street, }
February 21, 1879. }

W. D. Fay Day, M.D., Sanitary Superintendent:

MY DEAR DOCTOR: A so-called "report," published in the shape of an advertisement, and in the evident interest of Messrs. Gaff, Fleischmann & Co.,* makes use of my name in support of the conclusions said to have been arrived at by those signing the same. I need hardly say that no respectable physician should consent to have his name published in an advertisement, but in justice to myself, and in order to avoid any misinterpretation by the experts of your Board, I must inform you that I gave no authority for the publication of my opinion in any shape whatsoever. Further than that, I made a merely microscopical exam-

* See March number of the *Review*, a card in reference to cattle diseases at Blissville.

ination of two specimens of milk. I had nothing to do with that matter, and of that examination I made no formal report.

As I am not an analytical chemist, I do not presume to judge of any other than the microscopical character of fluids.

After my first visit to Blissville, I declined, under the plea of business engagements, to go again, for I became convinced that a thorough examination would neither be permitted nor was it desired. I was induced to go, not as a milk examiner, in which capacity the parties signing the report referred to, are endeavoring to represent me, but in my legitimate capacity as a pathologist. I was assured that the firm wanted a thorough and exhaustive examination, and that I should have the privilege of making an autopsy on two cows which should be selected as specimens and slaughtered for that purpose. Accordingly I went with and at the solicitation of Dr. Findlay. A cow was found in very bad condition, and with a temperature of $107\frac{1}{2}^{\circ}$ Fahr. I selected it for purposes of a *post mortem*, but the person in charge would not permit it to be killed. It was expressly understood by all the veterinarians present that no report should be published until all had had the opportunity for a thorough examination, including autopsies, and the publication in the *Herald* aforesaid was therefore a gross breach of professional etiquette.

I have written to the *Herald* city editor to have a correction inserted in his columns, but he does not seem, so far at least, to have complied with my request.

While I reserve my opinion as to the real or pretended existence of an epidemic in the Blissville stables entirely, I would state that those who visited those stables with me found more diseased cattle and far more intensely diseased individual cases than Doctor Liautard, who had examined the same cattle on three days previous.

Hoping that these lines will serve to correct and prevent any mistaken impressions from arising,

I remain, yours truly,

E. C. SPITZKA, M.D.,

Prof. Comp. Anatomy, C.V.C.

PROFESSIONAL TOPICS.

COMMENCEMENT EXERCISES AMERICAN VETERINARY COLLEGE.

On Wednesday evening, March 5, the fourth commencement exercises of the American Veterinary College were held in Lyric Hall, Fourth Avenue and Forty-second Street, New York City. A large and appreciative audience crowded the hall to overflowing. The exercises were presided over by the President of the Board of Trustees, Samuel Marsh, Esq. Upon the platform were the faculty of the college and the Board of Trustees, Prof. James Law, of Cornell University, other eminent members of the medical profession, and the Rev. Dr. Dubois, who opened the exercises with prayer. Prof. F. D. Weisse, M.D., Secretary of the Board of Trustees, read the annual report of the college setting forth the work which had been done during the year just past, and in which time lectures, didactic and clinical, had been delivered by the professors to a class of forty-two matriculants. He contrasted the success attending the efforts put forth in 1878 with that of previous years, and assured his hearers that the Board of Trustees were highly gratified with the growing prosperity of the college.

President Marsh then conferred upon the graduates, R. A. McLean, Brooklyn, N. Y.; T. B. S. Rogers, Newark, N. J.; C. C. Cattanch, N. Y. City; W. B. E. Miller, Hightstown, N. J.; A. D. Carman, Brooklyn, N. Y.; J. J. Smith, Chambersburgh, Pa.; Wm. H. Kleindopf, Middletown, Pa.; and T. J. Herr, N. Y. City, the degree of Doctor of Veterinary Surgery. Also the *adeundem* degree of D.V.S. upon T. S. Outerbridge, V.S., of Bermuda. Prof. A. W. Stein, M.D., then awarded the Alumni Association prize for the best general examination, consisting of Fleming's Sanitary Science and Police, elegantly bound; the gold medal offered by the New York State Veterinary Society for the best practical examination, and honorable mention from the professor of surgical pathology for the best written examination in surgical pathology, to R. A. McLean. The prize given by the profes-

sor of anatomy for the best anatomical preparation was awarded to T. B. Rogers; the silver medal was awarded to D. Light of the junior class, for best examination in anatomy, and honorable mention to T. C. Cowhey, for second best examination in same branch.

Prof. D. B. St. John Roosa, M.D., who was to have given an address, was prevented by sickness from being present. The address to the graduating class was delivered by Professor Law, of Cornell University, who pictured to the new members of the profession the arduous and responsible duties which graduation had imposed upon them; advised them of the honorable course which they were to pursue in their relations to each other, and of the grand results which lay within the reach of strict scientific application.

The stillness accompanying the benediction was followed by the lively strains of music from the band, and amid congratulations from the many friends of the college present, the exercises came to a happy close.

MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the United States Veterinary Medical Association was held at Young's Hotel, Boston, March 18, 1879.

The President and Vice-President both being absent, the Secretary called the comitia minora to order at 10:30 A.M., and nominated Dr. Stickney, of Boston, for chairman. Mr. J. N. Cutting's nomination for membership was laid over for future consideration because of his absence. The application of O. C. Farley, V.S., was, on motion, laid upon the table until next annual meeting. The Secretary called the attention of the meeting to the extended duties devolving upon the office of Secretary, and suggested that it would be to the interest of the Association to remunerate that officer for the work he is compelled to do. He claimed that at present the Secretary was virtually compelled to attend all

meetings of the Association wherever and whenever held, and to defray his own expenses; and that this, coupled with his many unpleasant duties, served to prevent suitable members from accepting the office, which should be held by one incumbent for as long a time as he continued to give satisfaction.

Dr. Robertson moved that the comitia minora recommend to the Association that a suitable remuneration be annually paid the Secretary after the expiration of the present term of office. This motion was adopted, and the committee adjourned. At 11 A.M. the Secretary called the regular meeting of the Association to order, and stated that in the absence of the President and Vice-President he was ready to receive nominations for a chairman. Dr. Stickney nominated Professor Liautard, of New York City, who was unanimously elected *viva voce*.

The following members answered roll call: Drs. Burden, Bryden, Cosgrove, Colburn, Field, Flagg, Holcombe, Liautard, Robertson, Stickney, W. Saunders, J. S. Saunders, Thayer, Very, Winchester and Wood.

The Secretary read the minutes of the last annual meeting, held in New York City, September 17, 1878, which were adopted without revision, on motion of J. B. Cosgrove. A. A. Holcombe nominated as candidates for membership in the Association the following named graduates: L. McLean, M.R.C.V.S., Brooklyn, N.Y.; R. A. McLean, A.M., D.V.S., Brooklyn, N. Y.; Thos. A. B. Rogers, D.V.S., Newark, N. J.; A. D. Carman, D.V.S., Long Island, N. Y.; Wm. B. E. Miller, D.V.S., Hightstown, N. J.; C. C. Cattanaach, D.V.S., New York City; J. J. Smith, D.V.S., Penna.; Wm. Kleindopf, D.V.S., Penna.; T. J. Herr, D.V.S., New York City,

In accordance with the recommendation of the comitia minora Dr. Robertson moved that after the next annual meeting the Secretary be paid an annual fee of twenty dollars; seconded by C. Burden, and carried. On motion of T. S. Very his motion, offered at the last semi-annual meeting and adopted, referring to the application for membership of L. McLean, M.R.C.V.S., Brooklyn, N. Y., was rescinded. On motion of Professor Liautard the committee on honorary diplomas were instructed to secure their early completion.

A resolution was then adopted, reading as follows: "Hereafter whenever a member's name is dropped from the roll for a breach of professional ethics, he be requested to return his certificate of membership, and receive therefor his initiation fee of five dollars."

A lengthy and most interesting discussion then followed on the subject of contagious pleuro-pneumonia, the questions: "Are so-called recovered cases of pleuro-pneumonia capable of transmitting the disease?" and "Is a cow inoculated with the virus of pleuro-pneumonia capable of transmitting the disease?" proving of especial interest and developing a diversity of opinion. After adjournment the members sat down to one of those sumptuous dinners for which our Boston friends are famous.

A. A. HOLCOMBE, D.V.S., Secretary.

ALUMNI MEETING.

The second regular annual meeting of the American Veterinary College Alumni Association was held in the lecture-room of the American Veterinary College on Wednesday, March 5th, 1879.

The meeting was called to order by the president at 1 P.M.

The following gentlemen were present: L. T. Bell, P. Nosstrand, A. H. Rose, W. J. Coates, C. H. Hall, A. A. Holcombe, C. B. Michener, S. S. Field, W. N. Wray, J. F. Winchester, J. C. Corlies, N. G. Schmidt and G. P. Penniman.

The minutes of the previous meeting were read and adopted.

The Executive Committee reported that they had expended \$15.00 for the Alumni Association prize, which consisted of "Fleming's Veterinary Sanitary Science and Police," two volumes, and which had been awarded to R. A. McLean, D.V.S., of Brooklyn. The Executive Committee were directed to draw upon the Treasurer for the necessary amount.

The Librarian reported that there were but two volumes in the library, "Gamgee's Practice," which were donated by L. T. Bell, D.V.S. Dr. A. A. Holcombe stated that he would present

“Dalton’s Physiology,” “Coe’s Concentrated Medicines,” “Flint’s Examination of Urine,” and “Microscopy.”

The Treasurer reported that as but very few of the members had paid their dues, there was but \$12.00 in the treasury.

The following gentlemen, who had just received the degree of D.V.S., were admitted as members of the Association: R. A. McLean, Thos. B. Rodgers, W. E. B. Miller, A. D. Carman, C. C. Cattanach, J. G. Smith, Wm. H. Kleindopf, Thos. J. Herr and Theodore Outerbridge.

The President appointed Dr. Coates, in the Secretary’s stead, to notify the gentlemen of their admission.

On motion, the President was directed to appoint seven, instead of five members, to compose the Executive Committee.

A communication from Dr. Blakeley was then read by the Secretary, in which were expressed the writer’s regrets at not being able to attend.

The President presented to the meeting the answer of the Board of Trustees in relation to the preamble and resolution which the Association forwarded to that body a year ago.

Dr. Coates introduced the subject of procuring a life size portrait of Dr. A. Liautard, to be placed in the American Veterinary College lecture room.

R. A. McLean moved that the President appoint a committee of three to make all necessary inquiries regarding the cost of the proposed portrait of Dr. Liautard, that said committee then inform each member of the Association of the amount, and request from each their share toward defraying the expense. Drs. McLean, Bell and Coates were appointed as such committee.

A paper was then read by Dr. Michener, after which the President appointed Drs. Bell, Winchester, Rogers, Nostrand and Corlies a committee to nominate officers for the ensuing year. A recess was then indulged in.

The committee on nominations reported as follows: President, A. A. Holcombe and Charles Burden; Vice-President, J. C. Corlies and W. N. Wray; Secretary, C. B. Michener and G. P. Penniman; Treasurer, R. A. McLean and Jas. D. Hopkins; Librarian, S. S. Field.

Drs. Schmidt and Smith were appointed as tellers, and the following gentlemen proved to have been elected: President, A. A. Holcombe; Vice-President, J. C. Corlies; Secretary, C. B. Michener; Treasurer, R. A. McLean; Librarian, S. S. Field.

The Secretary's bill for minute book, etc., was ordered paid.

Drs. McLean, Penniman and Corlies were selected to furnish essays for the next annual meeting, to be held about March 1st, 1880.

On motion, the Association adjourned.

C. B. MICHENER, Secretary.

A. A. HOLCOMBE, President.

STATISTICS.

SECOND ANNUAL REPORT OF THE KONIG. TECHNISCHEM DEPUTATION FÜR DAS VETERINÄRIEN, WITH REFERENCE TO THE DISTRIBUTION OF INFECTIOUS ANIMAL DISEASES IN PRUSSIA FROM APRIL 1, 1877, TO MARCH 31, 1878.

Issued February 1, 1879, as Supplement to Vol. 5, "Archiv für Wissenschaftliche Thierheilkunde, Hirschwald, Berlin."

Anthrax.—From this disease have died 70 horses, 1,203 cattle, 1,313 sheep, 204 hogs. As in the last report, so in this, little dependence can be placed upon the reported number of sheep, on account of the difficulty of gaining trustworthy statistics with reference to these animals; the number dying from this disease is suspected to be much larger. With reference to swine, it may be interesting to Americans to know that the so-called "hog cholera," is included here in some degree—no special statistics are as yet taken for the same in Germany—and that the greater number of the 204 swine thus reported as dying of anthrax died of this swine pest, thus showing very strikingly the difference between its ravages in Germany and the United States. The numbers with reference to horses and cattle may, however, be trusted, and give an idea of the extension attained by anthrax during the year in question.

As to dispersion, the disease comes to pass in—

1st quarter in	262	different localities, in which died	329	cattle.
2d	“	“ 410	“	“
3d	“	“ 213	“	“
4th	“	“ 171	“	“
				200

Total. 1,208

Thus showing the sporadic character of the disease. Nothing new with reference to its ætiology has been developed; in many places the disease is stationary. Eighteen cases of infection of human beings are reported, of whom nine died.

The *foot and mouth disease* is reported as having been constituted by 18,589 cattle, 2,495 sheep, 2,047 swine. Nothing of any great importance need be added to the abstract of the first year's report, printed in December REVIEW, with reference to ætiology and manner of extension. The disease is reported as having come to pass in three localities among *men*, from using uncooked milk from deceased cattle.

From *contagious pleuro-pneumonia* are reported as having been diseased 1,932 cattle, of which 71 died; 1,662 were killed by the veterinary authorities, and 247 by owners; a comparison of these figures with those of last report shows the number reported as deceased to be 1,189, as peremptorily killed 740, and as killed by owners 215 less. *This favorable decrease in the extension of this disease finds its explanation in the more exact execution of the law requiring the immediate slaughter of all deceased animals. This disease prevailed to a marked degree in Magdelburg and Merseberg, regions where inoculation is much more extensively practiced than in other parts of Prussia.* As remuneration for peremptorily slaughtered cattle the State paid out the sum of 287,937 marks (four marks to the dollar), against 344,808 of the last year. This sum is not paid direct from the State funds, but in each district there is an assessment on each head of cattle from which these losses are paid. *The chief moment to the extension of the disease is to be sought in the introduction and sale of apparently convalescent animals into different localities.*

From *glanders (malleus)* 2,953 are reported as diseased;

138 died; 2,499 peremptory killed; 211 killed by owners; a decrease on the last year which we see. *The careful endeavor to gain statistical knowledge with reference to this disease has proven that the disease is much more frequent than has been heretofore assumed, and that it frequently comes to pass in its pulmonary form where all external (visible) phenomena are wanting.* 470,214 marks were paid out as remuneration for peremptorily killed animals, against 406,480 marks last year (1876-77).

In one family six men became infected with glanders, of whom three died. One veterinarian died from glanders, and in the last quarter another man.

Variolæ ovinae, as in the last report, come most frequently and fatally to pass in those districts where preventive inoculation is still resorted to, the same giving invariably the most frequent cause to the eruption of the disease. The same is now forbidden and punishable, which may account for the favorable diminishing in number of cases reported as by natural infection. 706 sheep are reported as diseased per natural infection; 832 as protective inoculated; 3,888 as having died, against 873, 322 and 6,831 of previous years.

Maladie du coit not observed.

The exanthema of genital organs of cattle and horses is reported as coming to pass in about the same proportion and manner as in last report.

Scabies is reported as having come to pass by 967 horses, 135,896 sheep. Of the former 85 died, or were killed, and of the latter 1,309.

Rabies came to pass by 571 dogs, 6 horses, 132 cattle, 33 sheep, 16 hogs. 137 roaming dogs were killed, and 1,098 rabid, suspected to have been in connection with suspected or rabid dogs; 6 men are reported as having died.

The *Rinderpest* appeared in four small places in the vicinity of the Russian-Poland boundaries, the same possessed 715 head of cattle, distributed over 459 localities; the disease appeared in 91 of the latter. Nine cattle died of the disease, 81 were slaughtered, and 17 sheep and goats, of which 2 sheep and 7 goats were diseased.

The above represents but a very small part of the material contained in this most excellent report. The same covers 84 printed pages, and constitutes a small text book on infectious diseases, and in a much better and more instructive form than larger books of this kind often present such knowledge. The reviewer greatly regrets press of work prevents him considering more fully the mass of valuable material herein presented, and most cordially recommends every German-reading American veterinarian to study these reports, which can be easily done, as hereafter they are to be given out as a supplement to the Berlin Veterinary "Archivs," the cost of the latter being only \$3.25 per year post paid to the United States.

Berlin, February 1, 1879.

B.

EXCHANGES. ETC.. RECEIVED.

HOME EXCHANGES.—American Agriculturist, Scientific Farmer, Scientific American, Hospital Gazette, Medical Record, Country Gentleman, Turf, Field and Farm, New York Rural, American Bookseller, Prairie Farmer, Practical Farmer, Ohio Farmer, Maine Farmer, National Live Stock Journal, Western Farm and Live Stock Journal, Index Medicus, Medical and Surgical Reporter, The Farm Journal, The American Farmer, The Proceedings of the Medical Society of the County of Kings.

FOREIGN EXCHANGES.—Journal de l'Agriculture, Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Archives Veterinaires, Mouvement Medical, Clinica Veterinaria, Bulletin de la Societe Centrale de Medecine Veterinaire, Gazette Medicale, Revue fur Theirheilkunde und Thierzucht, Bericht uber das Veterinarwesen.

NEWSPAPERS.—Western Sportsman, Western Agriculturist, Our Dumb Animals, Vermont Record, The Ploughman, New England Farmer, The Leader (Can.), The Farmers' Review, The Nation, The Farmers' Head Light, The Gazette (Can.), Medical Times and Gazette, The Philadelphia Inquirer, Our Home, Evening Express (Providence, R. I.), Montreal Herald (Can.), The Inter Ocean (Chicago), The Item (Philadelphia).

CATALOGUES, ETC.—Seventh Annual Report of Roosevelt Hospital, The Relations of the Medical Profession to the State (by Dr. D. B. St. John Roosa), Announcement of the Spring Session of the College of Physicians and Surgeons,

COMMUNICATIONS.—Professor D. McEachran, F. S. Billings, E. F. Thayer, C. Michener, A. A. Holcombe, W. C. Corlies, N. H. Paaren.

BOOKS RECEIVED.—Diseases of Live Stock, by L. V. Teller, M.D.

AMERICAN VETERINARY REVIEW,

MAY, 1879.

ORIGINAL ARTICLES.

REPORT ON THE DISEASE IN CATTLE KNOWN AS "ANTHRAX."

BY PROF. D. MCEACHRAN, F.R.C.V.S.

MONTREAL, Dec. 31st, 1878.

SIR.—In compliance with your instructions, I beg to submit the following report on the disease in cattle known by the name of anthrax or charbon:—

The attention of the public is often attracted to a very fatal form of disease occasionally appearing on cattle, causing the sudden and mysterious deaths of several, under circumstances which, in the absence of a correct knowledge of recent pathological investigations, are very apt to lead to the supposition that poison had been maliciously administered.

The disease in question is neither new nor uncommon. It is unmistakably described in the most ancient authentic history, and it occurs at the present day in every country and climate on the globe.

The Dominion of Canada has unquestionably one of the most healthy climates in the world, and that most free from contagious epizootic diseases.

Although anthrax has never at any time during the last sixteen years, or since I have been in the country, occurred to any alarming extent, yet every year sporadic cases, or at least a few animals on isolated farms have been reported, and several outbreaks of it have been investigated by me more especially in the Province of Quebec, and recently in western Ontario.

Appreciating the vast importance of our great cattle interests, and the necessity for preventing unfounded rumors of disease being spread, I respond with pleasure to your instructions to furnish you with an account of this disease, in such a form as may prove useful to farmers and stock owners, by explaining its true nature so far as it is known to scientists.

Synonyms.—The disease is known by an endless variety of names in the different countries or districts in which it occurs, and assuming under different circumstances and in different animals a variety of forms, thereby increasing the number of meaningless and confusing terms which are applied to it. In this country it is best known by the term splenic fever, or splenic apoplexy, and *charbon* or *maladie de sang*, and when it assumes the carbuncular form with localization of the disease in the quarter, it is called “black leg,” or “black quarter.”

The term anthrax is perhaps not the best which could be adopted, for although to those who have kept pace with the progress of pathological anatomy the name appears quite correct, yet we do not find the disease assume in all cases the eruptive character which is ordinarily associated with the term anthrax. As the terms splenic fever and splenic apoplexy express the disease very inadequately and often improperly, I prefer to use the term anthrax.

History.—In the book of Exodus, 9th chapter, we find a plague sent by God on the cattle of the Egyptians “and it became a boil breaking forth with blains upon man and beast,” which undoubtedly was a disease of the same type as anthrax. Mr. Fleming points out a very vivid description of this disease by

the poet Virgil, which occurred on the Timavus, which involved domestic and wild animals in destruction ; and he also indicates the danger of transmission to man.

“The skins are useless, nor the tainted flesh
Can water cleanse, nor raging fire subdue ;
Nor is it possible to shear the fleece
All saturated with disease and filthiness ;
Nor can the weaver touch the putrid web,
But should a man attempt the odious garb
With burning pustules, and disgusting meat
His limbs offend ; and in no lengthened time
The fire accursed consumes his poisoned frame.”

The earliest Greek and Roman writers describe this disease under a variety of titles. As remarked by Bollinger, “After the authors of the middle ages, from the fourteenth to the eighteenth century, had concealed the various forms of anthrax as different diseases under numerous names, it first became known toward the end of the last century that these many-fold diseases were in reality only different forms of the same disease. The most noticeable services in this direction were rendered by Chabert, (1780), who in his monogram joined the similarity of the maladies, which until then had been considered as totally distinct.” So great was the interest taken in the disease, no doubt from its prevalence, that this little treatise passed through seven editions in as many years, and was translated into several continental languages.

I am not aware of any records of outbreaks of this disease in Canada having been kept, but in conversing with old people who have lived nearly a lifetime in the country, I find that they have no difficulty in recalling to mind repeated instances in which farm stock have died mysteriously, and which then as now was usually attributed to tonic plants, malicious poisoning, “the evil eye,” “elfshot,” or “a visitation of Providence.”

Nature.—It is a constitutional disease affecting all species of animals, more especially cattle, sheep and pigs, poultry and wild animals, and communicable to the horse and ass by inoculation. In whatever species of animal it occurs it is characterized by the same changes in the blood, but differing in different animals and

in different outbreaks in its outward manifestations. Thus we meet with it in the apoplectic form, in which death occurs in a few minutes without having apparently manifested any observable symptoms; the intermittent form, in which the symptoms are more protracted and intermittent; and the carbuncular or eruptive form, in which, as in black quarter, we have exudations and extravasations of blood of a thin dark color, becoming gangrenous. That this is a blood disease there is now no doubt. The microscope and the science of chemistry have made us familiar with the changes which that fluid has undergone, and the existence of certain organisms (bacteria), whether as a cause or product of the disease is not yet satisfactorily determined, nor do we know for certain whether they are animals or vegetable organisms. One thing we do know, that these organisms are found in the blood in all cases of this disease, and that wherever they are found the blood loses its plasticity, becomes thin and watery, its serum stained with the coloring matter of the corpuscles, and the blood putrefies readily, the poison, whatever it is, seemingly acting as a septic ferment. The blood changes take place with great rapidity, consequently death is sudden and certain in the majority of cases, occurring within forty minutes, without having presented any observable symptoms, the cattle generally being found dead in their stalls.

Causes.—The principal agents which are said to be either the actual cause or the intermediate bearers of the anthrax poison, are certain peculiarities of soil, especially those soils in which there is a large quantity of decaying vegetable matter. As remarked by Bollinger, “An unusual amount of *decaying vegetable matter* in the soil, joined with an excess of *moisture*, appears to furnish the most favorable conditions of life for the poison.” Fleming* says “It is most frequent and fatal in regions where the soil contains much organic matter in process of decomposition, and in those in which, while rich in humus, the land is retentive of moisture; in boggy countries, and marshy or swampy districts; and in localities liable to frequent submersion, or in which

*Sanitary Science and Police.

the surface water cannot escape or is in the process of slow evaporation. The injurious influence of these conditions is increased if the soil contains saline matters, such as sulphates, which favor the decomposition of organic substances. Roll, from this circumstance, seeks to explain the more frequent appearance of anthrax in places where the ground is manured with the aid of mineral matters, as marl, lime and chalk." He further adds, "It is organic substances undergoing decomposition under the influence of the humidity of the atmosphere which furnish the miasma supposed to be the cause of anthrax. A high temperature in favoring the evaporation of moisture from undrained land rich in vegetable matter or from marshes and swamps, and thus exposing a large quantity of organic material, still further accelerates its decomposition, and the products accumulate in the surface soil, the air which the animals breathe and the water they drink, as well as perhaps the food they eat. It would therefore appear, he infers, that anthrax is always due, when it arises spontaneously, to miasmatic infection.

The advocates of miasmatic theory have received many supporters, but a considerable experience of this disease in this country for sixteen years, during which time I have been repeatedly engaged in investigating the disease, has convinced me that these conditions, while they favor the spreading of the poison of anthrax, do not in any instance develop it. The conditions of the soil, the retention of water on its surface, the high temperature are all favorable to bringing to the surface and within reach of the animals pasturing in the field, a poison which may have many years before been buried, or partially buried, in the marshy land. We are all aware that the boggy part of the farm is the place of burial for the dead animals.

Bollinger:—"One circumstance which argues strongly against the miasmatic origin of anthrax is the fact that in this country we frequently meet with the disease during the winter months; as for instance in a recent outbreak of this disease near Sarnia, Ontario, which occurred late in December, when the animals were housed at night and running in the barn-yard during the day, at a time when the temperature was nearly at zero."

Certain conditions of the system are favorable to the reception of the poison when exposed to it. Thus during the summer season a stock of dairy cows were kept in a low damp ill-ventilated byre, in a suburb of Montreal; during the winter they were kept on what may be truly termed starvation allowance. In spring the poor cattle were little better than living skeletons, most of them lousy, many of them being so weak as not to be able to rise without assistance; a number of them died in calving.

The owner rented a large pasture field which had at one time been a burial place for animals, a knacker's yard having been at one time at the end of the field. There had been a large quantity of snow during the winter, and the field being low, lying flat, but not what could be called swampy, the water lay long on it in the spring, which was protracted but was followed by hot fine weather, which produced a rapid growth of succulent grass. A few days after the cattle were put on the field, one or two died suddenly, next day three or four, and in a week about fifteen died, and these the best in the herd.

As usual under these circumstances, poison was suspected, yet the owner did not know any enemy whom he could suspect. Wiseacres accounted for it by a white fox having crossed the field. On being consulted, I at once explained the true nature of the disease. The disease is seen in the same field every summer, and doubtless will continue to occur as long as it is used as a pasture for animals susceptible to the poison.

I do not wish to be understood to consider the anæmic condition observed in these cattle as essential to the predisposition to receiving the anthrax poison; numerous instances have come under my notice in which the animals were in good condition, and apparently in perfect health, but it is certain that reduced vitality renders them more susceptible to the action of the poison.

While it is evident from the results of the most careful investigations into the cause of the disease, the water, the food, or the soil itself may be the active factors or intermediate bearers of the poison of anthrax, it does not originate in them.

It may be interesting here to notice the result of a series of

experiments which was carried on at an experimental station established by the Bavarian Government at Langgries, Upper Bavaria, for the special duty of anthrax fever, (Veterinary Journal, page 423,) the founding of the establishment being due to the initiative of Prof. Feser, of the Munich Veterinary School. Although the station was only commenced in September, 1876, the number of experiments that year amounted to no less than 200; these were conducted upon the larger and smaller domestic animals. Seventy-two of these were conducted at Langgries or its vicinity, and the others were conducted at Munich, and were made upon 84 animals: 5 cows, 11 cattle, 35 sheep, 6 goats, 12 dogs, 4 foals, 4 pigeons, 2 rabbits and 5 fishes.

At the commencement of Feser's stay at Langgries, he attentively examined the pastures on which the anthrax fever most frequently appeared, and he discovered so many of the lower organisms thereon, and of such varied characters, that he found it impossible to describe them all; in fact he asserts that the life of a man would not be sufficient to make a complete study of these organisms, the majority of which were of microscopical dimensions. He noticed, however, that nearly all the vegetation on these pastures was charged with rust, smut or moulds of the most varied kind, and that everywhere, even on the most elevated lands, the ground was swarming with *bacilli* or *bacteria*.

It follows from the observations and experiments of Feser, that *the rust fungus*, so frequent in certain countries, and during certain years, *has no influence in the production of anthrax*. The white mucilaginous mass resembling the honeydew of barley, and which is found every year in the marshes and marshy places of the pastures of Upper Bavaria, infected with the anthrax disease, was more particularly suspected by Feser and especially attracted his attention. The labors of Koch and Cohn amply confirm the suspicions entertained by Feser, for it has been ascertained that the mucilaginous matter is made up of *bacillus subtilis*, the form and development of which are identical with those of *bacillus anthracis*. These marsh bacilli, as well as those of the hay, are in all probability foreign to the causes of anthrax; but because of their analogy to the bacteria of anthrax, a study of them may

furnish useful indications in researches undertaken to fix the character, &c. of the latter. As these marsh bacilli, so like those of anthrax, are developed, multiply and infest damp, hot and marshy pastures, it is admitted as probable that the same happens with the anthrax bacteria, and that the white mucilaginous masses before mentioned, should be suspected as masses of the latter until there is proof to the contrary.

Doubtless the experiments of Feser were suggested by the fact that in Bavaria and elsewhere in Europe, as in this country, in years in which smut is prevalent in the grasses and grains, anthrax is more common in cattle. This has been more especially observable during the past summer (1878), both in Canada and the United States, a great deal of the corn and wheat damaged by smut and rust fungus, concurrent with which was anthrax, has been usually prevalent.

It is reassuring, however, to know that Feser's experiments agree with my own observations, and the testimony of experienced stock raisers in all parts of the country, that smutty corn in the great majority of the instances can be eaten with impunity by cattle and sheep; this, however, does not preclude the possibility that the conditions which favor the development of smut, rust and vegetable spores may also favor the development of the *bacillus anthracis*, and that they may be conveyed to the animals in the hay, corn, other food or water.

Unquestionably, as remarked by Bollinger, "the most active carriers of the poison of anthrax are the diseased and dead animals in all their parts. Most frequently the fluids of diseased and dead animals are to be blamed, blood from blood-letting, blood which in the slaughtering, cutting up and burying of animals, adheres to everything it touches and quickly dries up, then the hides, hair, bristles, hoofs, bones, flesh, secretions, excretions—especially the excrement, all these are to be feared as vehicles of contagion."

The popular opinion which is universal in this and has existed for centuries in this and older countries, that flies during hot weather were active agents in disseminating the poison by feeding on the anthracoid carcass and inoculating both men and animals,

is also strongly advocated by Bollinger, Davaine and others, both having succeeded in producing anthrax by inoculation made with flies captured on the carcasses of animals dead of anthrax. So general is this idea in the Province of Quebec among the French Canadians, that seldom indeed can one of them be induced to assist at a *post mortem* examination of a dead animal during the fly-season, especially during hot weather.

The following interesting case of anthrax contracted by a fly bite in a horse during the past summer, may be of interest in connection with the subject:

The horse in question belonged to a well known cartage company in Montreal, and was employed in carting green South American hides from the wharf. The weather was warm and flies were abundant and troublesome, causing both the men and horses considerable annoyance.

This horse appeared to have been bitten about half-way down the neck on the left side, about three o'clock in the afternoon. A swelling appeared shortly after about the size of an egg, which gradually increased. The horse continued to work until about half past six, when he was taken to the stable. He was observed to be dull and disinclined to feed. Nothing however was thought of it till next morning, when, not having fed, nor laid down during the night, and the swelling of the neck having increased and diffused, spreading specially downwards, I was sent for. I found the horse standing with hanging head and dull listless expression, made to move with difficulty, breathing quick and short, pulse weak and irregular, counted with difficulty and numbering 60 per minute, temperature 104° ; this was about 12:30 p. m. The swelling was now considerable, reaching down to the shoulder. Scarifications to the part with hot fomentations, diffusible stimulants and acidulated drinks were ordered.

In three hours I was again sent for, but being out, my assistant, Mr. Bureau, visited him and reported an aggravation of all the symptoms and prognosed death within a short time. On my arriving shortly after, I found him down; the swelling extended over the whole shoulder, down the arm and between the fore-legs; it was cold, insensible and emphysematous or crackling; the

breathing was very quick; the pulse imperceptible and the temperature 80° ; after a few convulsive struggles he died.

It must not be supposed, however, that the disease is dependent for its propagation or even its transference to flies except in occasional or accidental cases, it being well known, as already remarked, anthrax is often seen during our cold winter, when we have no flies.

The chief source of anthrax is contagion dependent on the existence of a specific poison in the blood, which once developed possesses great vitality, and is capable, under favorable circumstances of soil, moisture, temperature and exposure, of developing the disease after many years. So active is the poison that Davaine claims to have produced anthrax by the millionth dilution of a drop of blood from a diseased animal.

We might quote numerous authentic cases in which the poison continued to live under various circumstances, and in most unexpected conditions produced the fatal malady. Koch, in speaking of the vitality of the spores, says, let them remain dry for years, in decomposing fluids for months, be repeatedly dried and wetted, still do the spores retain their baneful influence on living animal fluids. Use cotton wool to sooth a burn and perhaps you are applying yourself the seed of the disease that will kill you; bathe in a stream in which they are resting, and a scratch will offer them the way into your system."

Einike (Ziemssen III volume, p 393), relates the following case to illustrate the virulence and tenacity of the poison. The skin of an ox from whose flesh two persons got carbuncle, which died of anthrax in the fall of 1852, was soaked in the following spring in the water of a pond and then made up by the saddler into harness. The saddler got carbuncle. From a flock of sheep which were washed in the pond four weeks later twenty perished in a few days of anthrax, and both of the horses for whom the new harness was made died from the disease in forty-eight hours. The frequent deaths from anthrax, among rag-pickers and wool-sorters in England is another illustration of the vitality of the poison.

On this subject Fleming, "Sanitary Science and Police," says,

“There can be no doubt whatever as to the contagiousness of anthrax by actual contact or by the medium of contaminated substances. Thousands of observations, melancholy histories, and numerous experiments testify to the fact. The malady has been produced in man and animals through coming in contact either directly or indirectly with the bodies, excretions, debris of diseased creatures, eating their flesh or blood, or the food, herbage, or water contaminated by them by accidental or experimental inoculation, etc. Dogs which have been eating diseased flesh and have soon afterwards bitten other animals, have produced the disease on them by their teeth. Veterinary surgeons and others have been infected through manipulating sick animals while alive or their carcasses after they have succumbed, or by wounding their hands while doing so, and it is not at all infrequent for people to receive the disease from applying the skin, hair or wool of affected creatures to their bodies.”

Bacteria and Bacillus Anthracis.—The discovery by Professor Branell, of Dorpat Veterinary Institute, and subsequently by the eminent French veterinarian Delafond, of the presence in the blood of animals affected with blood poisoning (*septicæmia*) both before and after death, of myriads of staff-shaped bodies which have been called *Bacteria*, *Bacteridæ* or *Bacilli*, led to the examination of the blood of animals dying from anthrax, with the result, according to Davaine, of finding bacteria in every case, and that their appearance preceded the morbid symptoms, and that a single drop of blood was estimated by him to contain from eight to ten millions of these organisms.

Interesting experiments have been conducted by Branell, Delafond, Pasteur, Pollender, Bollinger, Davaine, Chauveau, Papillon, Omnis and others, to which I refer those who wish to study this subject thoroughly. In this paper it will be necessary to confine our remarks and quotations to the most recent facts which have been elicited as deduced from or suggested by the labors of these experimenters.

*The morphological peculiarities of anthrax bacteria may be

* Bollinger (Ziemssen, p. 396.)

characterized as follows :—According to Cohn's recent systematic classification of bacteria, anthrax bacteria belong to the group known as *filamentous bacteria* (desmobacteria) and to the species *bacillus*. The *bacillus anthracis* (Cohn) is closely related to the *bacillus subtilis* (*vitras subtilis*, Ehrenberg) to the butyric acid ferment (*ferment butyrique*—Pasteur.)

Bacilli, such as are almost constantly found in the blood of animals suffering from anthrax, possess the following morphological peculiarities: They are straight—less often, bent, or with obtuse angles—indented, cylindrical rods, of pale appearance, never branched, motionless, generally 0.007 to 0.012 millimetres long, and of a breadth which is hardly measurable; besides these well pronounced filamentous bacteria, smaller transitory forms may be found, although fewer in number, 0.002, 0.003, and 0.004 mm. long, down to the very smallest forms, which cannot be measured, and which, when viewed by ordinary glasses, appear as fine points, while with higher powers they are seen to be spherical bacteria, with all the optical and chemical peculiarities of filamentous bacteria.

Larger bacteria, which exceed the measurements above given, are rarely found, and those of 0.050 mm., as described by Davaine, have been only once observed by me, and then perhaps they were rather to be considered as *post mortem* products. With medium and low magnifying powers the filamentous bacteria appear without joints and homogeneous. With higher powers, and by employing artificial means, causing them to swell by soaking in water, it is seen that the filamentous bacteria are formed of different members, and are, in fact, constituted by a juxtaposition of round or short cylindrical cells.

The isolated spherical bacteria may also be found alone in the blood of anthrax. They grow continually by scission, and as little rows of cells united together constitute the rods (filamentous bacteria) which grow symmetrically at all points by scission. The little rods, which in the fresh state seem homogeneous, after they have been swollen by water and then dried, exhibit an envelope and a plasma.

Anthrax bacteria are distinguished from other bacteria (bac-

teria of decomposition, as found in animal or vegetable infusions, bacteria of sour milk), particularly by the fact that they have a certain symmetry of form and appearance and are devoid of motion. Otherways their behavior with re-agents is exactly the same as that of the above mentioned varieties, and they are noticeable for their great resistance to concentrated acids and alkalies.

Before proceeding to the study of the changes produced in the blood by the presence of these organisms, to enable our non-professional readers, for whom this paper is intended, to understand the nature of those changes, it will be necessary to explain here the structure of healthy blood.

(To be continued.)

DIE AUGENBLENNORRHŒ DER PFERDE UND IHRE FORMEN.

(Continued from page 17.)

BLEPHARO-BLENNORRHŒ.

The more mild form of the ophthalmic-blennorrhœ is the blepharo variety. It is to be so considered, as it is partly an anticipating process of the severer form, and again as when confined to itself its ravages are far less disturbing to the eye and its embracing appendages. The phenomena of blepharoblennorrhœ present themselves in their severest grade in the course of twenty-four to twenty-six hours, according to the grade of action of the ætiological momenta. The abnormal condition of the eye first presents itself as an excessive lachrymal secretion ; further the animal may be observed rubbing the disturbed organ on every convenient object, which is as a rule the first incentive which calls the observer to investigate the questionable eye, and to add to the observation of the consequent changes upon some. The observer must

carefully study the external phenomena thus presented to his view. An eye so diseased is observed to be entirely covered by the superior lid; the inferior, however, also contributes to the closing of the eye during the early stages of the disease. Later, when the disturbance has become well developed, the inferior lid becomes thick and pendulant, and assumes an atropic condition, although the animal seeks in every way to protect the sensitive parts of eye from the action of light, against which it appears to be highly reactive; it lacks, however, ability to close the inferior lid, the contumescent condition of the same offering a sufficient obstacle to all movements; the disturbance of the lid from the bulb being entirely influenced by the degree of tumefaction present. The superior lid presents an important convexity, as if the bulb itself were hypertrophied or exophthalmus were present, but on more intimate inspection we find the cause to consist in an excessive inflammation of an hyperæmic exudative-character. The exterior contour of the eye presents phenomena indicating the various insults received from rubbing, &c. These phenomena might lead one to assume that he had to do with a case of blepharitis traumat, which would be wrong, as they are simply indicative of the excessive cutical irritation present, and the attempts of the patient to relieve the same. The canthus externa and interna are filled with a yellowish viscid muco-purulent mass, the cilia connected together by the same. The lacrymal secreta is very profuse and causes excoriations as it flows along the face. These superficial phenomena have been the cause of many diagnostic mistakes, for if we enter into a more profound investigation of the diseased organ, we shall find before us not only an excessive conjunctivitis palp, but also conjunctivitis total. The same is in a swollen injected tumefied condition, circumscribed hæmorrhages make themselves evident. The cornea is very much swollen and photophobia excessive. This active inflammatory condition continues from one to six days, the infiltration of the conjunctive palp, and its continuations constantly increasing, the lacrymal secreta becomes more and more profuse, the exudate more viscid and purulent. If we study the conjunctiva in its entirety more closely, we shall observe on its surface, especially the superior portion on the limits

where the same passes into the conjunctive palp, a large number of small, firm semi-pellucid, greyish or greyish-yellow eminences projecting above the surface of the membrane, which in form present a strong resemblance to the ovula of frogs; the same appear to be situated between the strongly injected vessels of the conjunctiva. These small bodies may either be limited to the named portions of the membrane or distributed over the whole surface of the same, either singly or in groups, yet the posterior portion of the conjunctiva bulbi seems to be the primitive point of development. The conjunctival exudate appears as a yellowish-white, non-opaque viscid mass, which accumulates mostly on the inner surface of the conjunctive palp. The latter is here and there exceedingly infiltrated, and the lid itself tumefied; the conjunctiva present a copper-like appearance where exposed to external influences. If the inflammation is still active, the eye and its surroundings feel excessively warm to the hand, and so long as this continues the exudative processes continue in full profusion; as the inflammation begins to lessen in intensity, the palpebral-intumescenz gradually loses itself, and the pruritus to diminish and finally disappear, the patient demonstrating the same by less and less inclination to rub the afflicted parts. The photophobia also decreases, the patient gradually opens the lids, the turgescence of the vessels diminishes, and the conjunctive palp remains more or less thickened, injected, its surface somewhat uneven, and the portion between the conjunctive palp and bulbi marks itself by its swollen condition, the lids do not place themselves in normal opposition with the bulbus. On close investigation of the now approachable cornea, we may frequently observe small excoriations of its epithelium, and the conjunctival sack still secretes more or less of a viscid, muco-cellular mass. The inflammatory action has only presented us an intermission in its course, an excessively irritable condition continuing, which at the most insignificant moment may give occasion to further progress in the disease. If the necessary conditions to recovery are, however, present, in 10 to 14 days the injected condition of the conjunctiva still more disappears, the secretion diminishes, loses its cellular character, but is still viscid and flocculent, the infiltrated condition gradually disappearing,

the secretion becoming more and more normal, until finally attaining its normal grade. These are phenomena accompanying a favorable course of blepharoblennorrhœ; also, such is seldom its course. As a rule the disease causes profound disturbances of a part or the whole of the visual apparatus, leading, in most cases, to loss of sight when we are not able to check the inflammation before attaining its full development.

The lethality of the blennorrhœic processes are of themselves not so important—yes, might be even said to be insignificant, were it not for the severe corneal complications, and those of the profoundly situated visual apparatus, which present themselves in the course of the disease.

The consequences of an excessive inflammation, such as clouded cornea, cicatrices in same, phthisis of cornea, pannus, synechia of the iris, corneal staphiloma, and phthisis bulbi, give evidence of the severity of the same. All these conditions come to pass more or less as complications, and in concrete connexion with the primary disturbance, at one time combined with the blepharo, and at another with the ophthalmoblennorrhœ, all combined representing the characteristics of the disease. By blepharo-blennorrhœ the processes extending very easily to the cornea, in most cases a large lenticular or semi-lunar or roundish portion of the cornea, generally in its periphery, being the seat of the affection; this same is at first more or less diffuse, but in a day or so its limits become more marked, it begins to degenerate, softens, and finally becomes transformed to a puriform mass. By means of these processes is generated an ulcerous surface with greyish-yellow ground and peripheries, and in inclination to complicate the deeper seated elements of the cornea. These ulcerated spots give way to a conformable treatment, notwithstanding the purulent, infiltrated condition of the elements immediately adjoining, leaving cicatrices frequently in the cornea, in some cases prolapsus iridis; frequently, small, circumscribed, sero-lymphatic effusions remain, which are frequently accompanied by vascularization. Idiopathic intracorneal effusions, sometimes quantitatively insignificant, may be observed as further complications; in other cases, atelectasis of the corneal

vessels may be observed, followed by moderate exudation-pannus. The intra corneal exudat, when circumscribed, gives rise to keratitis apostematosa; the pus from the same either suffers metamorphosis and absorption, or penetration of the cornea takes place. Cicatrization of the corneal ulcers—keratitis ulcerosa—sometimes takes place, or penetration and prolapsus iridis comes to pass.

A very frequent complication is the development of bulla and pustulæ upon the cornea, which either suffer resorption or rupture, giving occasion to prolapsus iridis. Non-transparency of the cornea from coagulated exudate, deformity of the iris, cloudiness of the corpus vitreum are frequent occurrences, while cataract comes only seldom to observation.

OPHTHALMO-BLENNORRHŒ.

This disturbance attained quite a notoriety for its pest-like eruption among the horses of the French army invading Egypt in 1798, and received the name "*Ophthalmie militaire contagieuse*." Later investigations demonstrate the same to be nothing more than an excessively severe form of blennorrhœ. My experience leads me to consider the same as a most threatening disease of the eyes of the horse. Shortly consequent to the action of the irritant, oft within a very few hours, the most extensive complications of the eye appear which previously seemed entirely healthy, but the blepharo-blennorrhœ, which continues for a longer or a shorter time, may suddenly be observed to have become generalized to an ophthalmalmo-blennorrhœ or ophthalmnia. If we carefully review the various veterinary ophthalmic works, we find many pathic processes described which bear more or less relation to ophthalmalmo-blennorrhœ; Strauss, Hertwig, Haubner, Veith, *et al.*, all describe phenomena of the same, and describe the pathic processes with varying exactness, yet never as an ontogenetic disturbance, but always as a participating phenomenon of different internal and external complications of the eyes. This circumstance has undoubtedly given occasion to many diag-

nostic errors and complications. Both ophthal- and blepharoblennorrhœ seem to have been frequently observed, but always looked upon as belonging to the so-called ophthalmia specifica, or as keratitis ulceroza. J. E. Veith seems to have described the complications in question under the name of ophthalmia equiperiodica, but complicated it with amaurosis, the so-called specific ophthalmia, and other disturbances. I have, however, no doubt that every reflecting professional will have no difficulty in seeing the distinction between the disturbances we are now considering and those of *irido-choroiditis recidive*—the so-called periodic or specific ophthalmia.

The phenomena of ophthalmo-blennorrhœ or ophthalmia are as follows: As already mentioned, the most extensive complications soon follow the irritations phenomena. The external circumference of the eye become swollen and the already mentioned traumatic lesions are to be seen. The inferior lid is much swollen. An ill-colored reddish secrete flows from the eye; the lids are only to be separated with difficulty. The cornea is very glowing, and its peripheries marked by their highly swollen condition. More intimate investigation of the complicated eye reveals the presence of particles of straw, hair, etc., within the conjunctival sack, introduced therein by the rubbing of the patient. Within 6 to 12 hours a flocculent, purulent exudate may be seen flowing profusely from the eye. As the disease progresses, the cornea becomes clouded, uneven on its surface as if strewn with fine sand; finally, the corneal disturbances assume a rather triangular form, with the basis on the periphery of cornea.

By many severe cases the cornea becomes swollen to a veritable pustulous mass, which soon bursts, giving rise to an extensive keratitis ulceroza profunda. In such cases the eye is lost unless energetic measures are at once introduced. If the tumefaction of the lids relaxes somewhat, as well as that of the cornea, then it becomes possible to gain a better view of the intra-palpebral disturbances. The conjunctivæ are highly hyperæmic, almost copper-colored, tumefied, and uneven. The previously-mentioned granulations may be seen upon the surface of the mucosa in great profusion, the spaces between them being taken up with a fibri-

nous pseudo-membrane. If the inflammation recedes still more, we find the conjunctival surface covered with a yellowish exudate, which in course of the disease becomes transformed to a purulent, flocculent mass. An excessive keratitis is always present. Sphacelus corneæ is a frequent complication by this disease, which seems to indicate the highest grade of the same. The further changes have already received consideration when speaking of blepharo-blennorrhœ. The latter may sometimes come ontogenetically to development, without leading to the more severe disturbance, while the ophthalmio-blennorrhœ is characterized by the acuteness and severity of its eruption and the severe lesions which it leaves behind. Trochoma of the conjunctivæ deserve our further attention. An idiopathic eruption of the same, as observed by mediciners, has not come to my notice, they only appearing as an accompaniment of blennorrhœ, being one of the chief characteristics of the same.

THERAPIC.

Before I became thoroughly acquainted with the very malignant character of the disturbances in question, I had made experiments with about all the medicaments recommended for such, and as a rule, received only negative results. Argent. nitricum has proven to be the most active combatant in my hands. Cuprum sulfuric also gave positive but far less satisfactory results. At present the lethally ending cases in my practice do not exceed ten per cent, which is a very favorable comparison with all former attempts at treatment. As soon as we have correctly diagnosticated the presence of a blennorrhæ, it matters not which form, our first duty is to ascertain the dignity of the disturbances which have thus far been produced. If the disease is limited to the conjunctivæ, and the cornea uncontaminated, the trochoma deserve our first attention; they are frequent difficult of diagnostiation when excessive inflammation is present. In such cases one can help himself with a small hand-glass. These granules, as well as the entire conjunctival surface, without regard to the grade of the disease, must be intensively corroded with Ag. NO₃. This must take

place, although gangraena threatens. The entire conjunctival sack must be subjected to this treatment, regardless of conditions present. In consequence of the combination of the silver with chlor. and albumen, the corrosion is soon followed by the formation of a thin membrane on the surface of the conjunctivæ, and a profuse lachrymal secretion. By this means a part of the dissolved salts is worked away. The eye must now be washed with a previously prepared solution of Na. Cl. in order to completely neutralize any remnants of the Ag. NO₃. The eye must now be antiphlogistically treated with ice, for the next twelve to eighteen hours. If the inflammation does not relax, the same must be continued longer. If the inflammation has mostly disappeared and there are still to be seen exudate-masses on portions of the conjunctivæ, the same must be treated as before with Ag. NO₃, Na. Cl. and ice-cataplasms. Such a course soon overcomes the inflammation, the infiltration and exudate disappearing and the eye returning in a short time to its normal condition. Sclerotic or swollen places on the conjunctivæ, often remain without interfering with the sight. The conditions are not so favorable when the cornea is also complicated. In such cases the same treatment with Ag. NO₃ must be at once introduced, and the ulcerated places carefully pencilled. Ice-cataplasma must also follow.

Cases come to pass when the cornea seems almost destroyed, and the eye as apparently lost, yet even in such we must not neglect to use the Ag. NO₃ repeatedly and perseveringly, but with due precaution until cicatrization appears. In such cases, one must always observe the condition of the conjunctiva. Frequently improvement begins after the second, and in some cases after the first corrosion, and the eye recovers in two or three days. In other cases, the condition is more obstinate, and the disturbances more excessive, and we are necessitated to resort to the corrosive ten or twelve times. One must endeavor to prevent, as far as possible, the clouding of the cornea; but I must especially emphasize, that it is highly disadvantageous to waste time in combatting the same, in the hope that the inflammation will relax, for before that time, the intra-corneal exudate would have coagulated.

Our best course is to combat the clouded cornea some hours after the corrosion has taken place, although at the same time the application of the ice must also take place. To the above purpose I have found Hg. O. to be the best means ; but we must not use the same until three or four hours subsequent to the application of Ag. NO₃. In such cases, when photophobia remains after disappearance of the inflammation, an application or so of Ung. hyd. cin. comes well in place. The above is the only method of treatment which we find worthy of recommendation.

EDITORIAL.

PLEURO-PNEUMONIA.

How much our foreign trade in cattle may be affected by the presence of epizootic pleuro-pneumonia in some of our Eastern States, is a problem which time only will solve, but which depends much on the successful execution of the sanitary measures which have been taken in New York, New Jersey, Pennsylvania and other States where the disease is *known* to exist.

For those amongst us who know the disease, who have seen it here and abroad, who have witnessed post mortem examinations, who have followed the history of many well authenticated cases, there is no doubt that epizootic pleuro-pneumonia exists in different States, and less doubt that if not checked in time, it may extend over our vast continent.

However, as shown by a card reprinted in the February number of the REVIEW, there are in New York a few who deny the existence of that disease, even in that most important and dangerous of centers of infection at Blissville, L. I. ; and though the statement then made was to a certain extent contradicted by a letter which we printed in our March number, one of the incredulous wrote to the *Medical Record* a letter attempting to show the error which was committed by the majority of the veterinarians, who had visited and seen post mortems at Gaff, Fleischman

& Co.'s. Prof. Law answered that letter, and both of these will be found in toto in this number of the *REVIEW*.

Lesions found at post mortem are said to be characteristic of the disease, and the question at stake, whether or no those found at Blissville or in the other animals killed by the authorities since, were the true lesions of contagious pleuro-pneumonia, seem to be the problem which European authorities were called upon to settle.

A letter said to have been written to an *eminent American pathologist* (?) by Prof. Williams has been published, which tends to criminate the diagnosis made by Profs. McEachran, Law and others, besides ourselves, and to show that after all, all the writings, reports, orders and sanitary measures were all useless, as no contagious lung disease existed here.

Prof. Law, though much pressed by the work which has been placed in his hands, and which he carries with so much energy, and whose result will never be forgotten, still finds a moment to answer Prof. Williams. These we print also.

Now, as we desire to be charitable towards every one, it seems to us that this letter of the eminent professor of Edinburgh has been written by him without a thorough acquaintance with the *truth*, and that he has been misgided by *one* who has *never* been present, as far as we know, at any of the post mortems made either in Long Island or any other place by order of the officers appointed by the Governor of our State.

It is with much regret that we find Prof. Williams in the equivocal position where he has placed himself in relation to the Blissville cattle, as stated in his letter, for this is taken as a powerful argument by the few whose interests it serves, and with which they are trying to save themselves from an ignoble drowning. In such a professional position and standing as the one held by Prof. Williams all over the English speaking world, an erroneous statement is not excusable, and for this reason ought not to have been made without thorough evidence of its correctness.

Whether the Ontario cattle had epizootic pleuro-pneumonia or not we do not pretend to say. The professional standing of the Professor ought to be sufficient guarantee of the certainty of his diagnosis, though we understand he was the only one among

the veterinarians who saw these cattle, who denied the lesions to be those of pleuro-pneumonia. But what is the connection between the Ontario and the Blissville cows, we fail to see: except it is to save the opponents to the measures taken by the State governments.

Nevertheless, as we cannot bring ourselves to the idea that Professor Williams has written the letter knowingly, we feel it our professional duty to make room for a report of the post mortems made in Long Island, where the State Commissioners were present with many invited witnesses, among which were the gentlemen who sign the card published in our March number, as well as the author of the letter to the *Medical Record*, but not the *pathologist* referred to.

We now expect from Prof. Williams an answer to the queries: Are the lesions described by Prof. Holcombe characteristics of contagious pleuro-pneumonia, and did the animals who presented them suffer from that disease? and, if not, how is it that they so thoroughly agree with those which he described in his work on Practice?

For us the faith and confidence of Prof. Williams have been deceived, and we are too glad to give him an opportunity to acknowledge it.

VETERINARY HONORS.—Among the graduates of the Bennett Medical College, for the degree of M.D., is found the name of Mr. N. H. Paaren, the well known veterinarian of Chicago, of the editorial staff of the *National Live Stock Journal*. One more M.D. among American veterinarians.

PLEURO-PNEUMONIA.

REPORT OF THE CATTLE COMMISSIONERS OF MASSACHUSETTS RELATING TO PLEURO-PNEUMONIA IN 1863.

(See page 30.)

COMMONWEALTH OF MASSACHUSETTS.

To the Honorable Senate and House of Representatives :—

The Commissioners on Contagious Diseases of Cattle, in their annual report stated that the disease (pleuro-pneumonia) had not a visible foothold in Massachusetts, not a case having been presented since August last; but on Wednesday, February 11, 1863, their attention was called to a sick cow in Waltham. On examination, pulmonary disease was apparent; and on inspection of the other cattle in the herd, another cow was found to be suffering from loss of appetite and difficult respiration. Both came from Brighton market about five weeks previous.

The first mentioned cow died after a sickness of about ten days. The autopsy revealed the peculiar characteristics of contagious pleuro-pneumonia in the acute form. The other cow, after a sickness of four weeks, being unable to rise, was killed, and on examination of the lungs these presented the appearances common to the disease in its more advanced condition, exhibiting the diseased lung tissue in an encysted form. Both of these animals had been removed from contact with the rest of the herd, consisting of twenty-one head, yet on examination yesterday, March 25, two more exhibited, in a marked degree, the early symptoms of pleuro-pneumonia.

Whether the disease in the present case came from other States, where it is known to exist, or from some secret hiding-place in this State, is not known, and on account of the immense traffic in cattle it may be difficult to ascertain; yet the Commissioners believe that, with the hearty co-operation of all cattle owners, it can be controlled here, and it is deeply to be deplored that other States where the disease exists do not adopt similar measures with ours for its extermination, for, should it extend to the vast herds of cattle in the western country, the losses would be incalculable.

In view of the foregoing facts the Commissioners recommend that the Legislature appropriate the sum of \$5,000 to meet the present exigency and such as may arise during the current year.

Respectfully submitted.

E. F. THAYER,
For the Commissioners.

BOSTON, March 26, 1863.

COMMONWEALTH OF MASSACHUSETTS.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts.

The Commissioners on contagious diseases of cattle, in their Report of January, 1863, stated that there was not then a visible case of the disease called pleuro-pneumonia existing in the State. In February following, they were called upon to visit supposed cases on the farm of Wm. P. Childs, in Waltham, and subsequently communicated the results of their investigations to the Legislature, stating that they were unable to trace the origin of the disease in that herd. It was afterwards ascertained that the disease had existed in Lexington, "in a secret hiding-place," for several mouths previous.

The course taken was first to isolate the herd of cattle in Waltham, after which active measures were taken to discover the origin of the outbreak. The dealer, of whom Mr. Childs had purchased cattle, denied having any reason to suspect the existence of the disease in his herd, consequently the markets where the cattle were purchased were visited, and when no traces of the disease could there be found, it was feared that all efforts to control the malady would be fruitless.

Several weeks elapsed before it became known that other herds were infected, and that many animals had perished from the disease.

The expenses already incurred having exhausted the appropriation of \$1,000 made by the Legislature, report of the fact was made to the executive department, the opinion of the Attorney-General of the Commonwealth was taken as to the individual liabilities of the Commissioners, the result of which was the stopping of all further proceedings, and the resignation of the Commissioners.

To eight herds, in which there was satisfactory evidence that the disease existed, it was ascertained that the infection was communicated by cattle purchased of the dealer before alluded to as having denied the existence of the disease in his herd, and in most cases, the cattle purchased of him were the first attacked.

It was estimated by the Commissioners in May last, that the expenditure of \$3,500, in addition to the appropriation of the Legislature, would have arrested the disease at that time. Satisfactory evidence is now at hand that it will require \$10,000 to cover the loss since sustained by State, towns and individuals, in consequence of leaving the disease to take its course.

In several instances, where the disease has broken out, the owners of cattle have disposed of them without calling upon the authorities for recompense, and if *all* the cattle that have been exposed to the disease, had been disposed of in such a manner as not to endanger others, doubtless no one would complain. But the character of this disease is so insidious that it is impossible for owners, or any one else, accurately to determine the existence or non-existence of the malady, and cattle may be disposed of in such a manner as to carry the contagion to many herds; hence the necessity of most stringent measures for arresting the disease at the outset. To accomplish this effectually, there should be in existence an active board of Commissioners. The result of leaving the matter to the

local authorities of towns has been disastrous. This is owing, in great part, to the circumscribed action of such local authorities. They cannot reach the source of the disease. By the statute, the Commissioners have full power to visit any locality in the State, and require any persons to testify under oath as to their knowledge of the existence of pleuro-pneumonia in their vicinity, hence the fear of detection and punishment deters many from sending cattle that have been exposed, to the public markets to be sold ; but as selectmen can only act within their own municipalities, such cattle can be sent beyond the town limits and sold without restraint.

If no board of Commissioners be appointed, and no active measures are to be taken by the State to prevent the spread of the disease, then it would be important that all laws relating to payments for infected cattle slaughtered should be repealed. Otherwise an unprincipled owner may sell a cow, infected with the disease, into a herd of sixty or more, and the owner of the latter may, when his cattle are taken sick, call in the authorities, and the town and State will be obliged to pay large sums of money, without thereby effecting any thing towards the arrest of the disease.

The importance, as a sanative measure, of checking the spread of a contagious malady like this, has never been considered here as it should be. In England, where the trouble has become wide-spread, through inattention and neglect, active measures are now being taken to counteract the evil. There strenuous efforts are made to prevent the sale of diseased meat, a business of great extent in that country, and which has just commenced in this. The effect of selling the meat and milk, in that country, of diseased cows, is now known and felt, and even perceptible in its vital statistics. It will be so here, unless prompt and efficient action is taken to prevent it.

Respectfully submitted,

JAMES RITCHIE,
E. F. THAYER,
HENRY L. SABIN,

Late Commissioners on Contagious Diseases of Cattle.

BOSTON, December 9, 1863.

To the Honorable Legislature of the Commonwealth of Massachusetts :

Chapter 138, section third, of the General Laws of 1862, provides that "Cattle Commissioners, now or hereafter appointed, shall keep a full record of their doings, and report the same to the Legislature on or before the tenth day of January in each year, unless sooner required by the Governor."

The undersigned received an appointment as one of the board of Cattle Commissioners, dated June 3, 1863, and was qualified under the same June 17, following. So far as he has learned, no additional Commissioner has been qualified. Under these circumstances, having had no authority to transact any business relating to the Commission, no report can be made. It is, however, proper to state that official notice was received from the selectmen of the following named towns, bearing the dates annexed, of the existence of pleuro-pneumonia within their several limits, viz:—

Lexington.....	June 15.	Holliston.....	July 21.
Hingham.....	July 4.	Ashland.....	Aug. 6.
East Marshfield.....	" 16.	Natick.....	" 25.
Sherborn.....	" 17.	Waltham.....	Sept. 3.
Dover.....	" 20.	Northborough	" 22.

Not having authority to give official aid in any of these cases, the undersigned has rendered what assistance he was able in answering repeated and urgent calls for advice.

It would seem eminently proper that if the Commission is to be continued, the vacancies therein should be filled without unnecessary delay.

Respectfully submitted.

JABEZ FISHER.

FITCHBURG, January 8, 1864.

CORRESPONDENCE.

THE LUNG PLAGUE.

NEW YORK, April 2, 1879.

To the Editor of the Medical Record :

DEAR SIR.—In the number of the *Record* for March 29, on page 303, an editorial on the lung plague appears that is not, in my opinion, in keeping with the views entertained by “leading members of the veterinary profession in Europe” or our own country. The present scare about pleuro-pneumonia in cattle is certainly unwarranted. During the winter months simple lobular pneumonia, and occasionally circumscribed pleuritis as a complication, is a common disease met with in cattle where large numbers are kept near large cities for dairy purposes. The animals are packed together in small space, the ventilation imperfect, and they are exposed to extremes of *heat and cold*, by opening and closing of doors communicating directly with their apartments. I examined the animals at Blissville on three separate occasions, in connection with several veterinary surgeons and medical gentlemen well acquainted with the history and pathology of the disease in Europe, and we were agreed that

contagious pleuro-pneumonia *was not in existence*, and *we so reported*. Our report, *at that time* in the *minority*, has been reinforced by the post mortem and microscopic examination of sections of the lungs taken, and lately by a letter to Prof. Smith, of Toronto Vet. College, from Prof. Williams, of the Edinburgh Veterinary College, who witnessed one hundred post mortems of the American cattle slaughtered in Liverpool, said to be suffering from contagious pleuro-pneumonia. Williams reports that they suffered from *simple pleuro-pneumonia*, which was non-contagious.

In *my experience* the incubative stage does not extend from one to sixteen weeks. During an enzootic of pleuro-pneumonia confined to the lower part of Westchester County, in the years 1875-'76, I received and treated 360. In some cases in cattle the incubative stage was short. On one farm, in a dairy of 80 cows, three days after purchasing some cows from a drover, the invasion of the disease occurred, ushered in by a chill (rigors); elevation of temperature, thermometer registering 102° to 104° F.; respiration increased in frequency and became spasmodic in character and abdominal; nostrils abnormally dilated; visible mucous membranes infected; suppressed cough; loss of appetite; the flow of milk arrested, and, in the majority of cases, entirely suspended until convalescent. Auscultation and percussion reveal abnormal sounds peculiar to disease of the respiratory organs. Convalescence sets in on the seventh or eighth day, and is completed in a majority of the cases on the twenty-first day. Under appropriate treatment 85 per cent recover. Such is my record; and in my opinion cattle that have passed through an attack are better suited for dairy purposes in an infected district than fresh stock. In experimenting with milk of diseased cows fed to calves, I have failed to produce positive results. At Blissville the mortality from the disease was slight. The majority of the animals were slaughtered, and sold in the market as beef. This is not in keeping with a malignant disease *theory*. Again, in conversing and corresponding with veterinary surgeons and stockraisers, in various parts of the country, I have as yet failed to discover the innumerable quantities of animals affected,

as reported in the daily papers. In conclusion, I sincerely hope that an appropriation will be made to study the best possible means of guarding against outbreaks of disease, but not for that antediluvian method, the stamping-out process.

Respectfully yours,

R. W. FINLAY, V. S.,
No. 134 West 124th Street.

PLEURO-PNEUMONIA IN CATTLE.

DEPARTMENT OF HEALTH, 66 COURT STREET, }
BROOKLYN, APRIL 14, 1879. }

To the Editor of the Medical Record:—

SIR: Your correspondent, R. W. Finlay, impeaches the State authorities, charged with the exterminating of the *bovine lung fever*, with mistaking *simple pleuro-pneumonia* for specific diseases in question. His charge would be a serious one if founded on a substantial basis; but as it is, it is difficult to correctly characterize the statement which he advances in the name of an argument. The cattle in the *Blissville distillery stables* were not affected with contagious pleuro-pneumonia, because Prof. Williams, in opposition to Professors Duguid, McCall and Walley, pronounced that steers shipped at *Portland, Me.*, were not so affected. If Mr. Finlay has any private information, showing that the cattle shipped on the *Ontario* from *Portland, Me.*, were taken from the Blissville stables, it will go far to settle the question as to the nature of the disease about which the professors differed at *Liverpool*. If he has not, perhaps he will kindly enlighten your readers as to the possible connection between the cattle shipped at *Portland* and those in the Blissville stables.

“Veterinary surgeons and stock-raisers in various parts of the country . . . have failed to discover the innumerable quantity of animals affected, as reported in the daily papers.” Mr. Finlay is welcome to his empty honor of demolishing this man of straw, for whom the State authorities are in no sense responsible. The disease exists in a comparatively limited area on the Atlantic seaboard, and its extinction here is a possible and comparatively

easy task, while the neglect of it means the greatest injury to the future live stock interest of the country.

“At Blissville the mortality from the disease was slight. The majority of the animals were slaughtered and sold in the markets as beef. This is not in keeping with a malignant disease theory.” If Mr. Finlay and his colleagues had been “well acquainted with the history and pathology of the disease in Europe,” they would have known that this is precisely the European record of this disease.

In large cities of Great Britain and the Continent, it is altogether exceptional for a cow to die of pleuro-pneumonia. The dairymen purchase mainly cows in good condition, and when the first symptoms of the malady are shown, they send them to the slaughter-house for beef. It is a common remark with them that they would get rich if they could only keep the cows alive for three months after purchase. But to return to the Blissville stables. Between the time of the first examination by Professors McEachran and Liantard and Mr. Gadsden and the establishing of quarantine, nearly 300 cows had been removed from these stables for slaughter or otherwise, so that comparatively few *diseased cattle* were left. Yet, of the 600 that remained, we had to send 24 to the offal dock, and about 150 more, slightly affected, went to the Johnson Avenue slaughter-house. In other words, we slaughtered and furnished indemnity certificates for over one-tenth of the animals left after the disease had been weeded out, to the best of the owners' knowledge; while, by adding those in which traces of the malady were found, we had a grand total of nearly one-third of the entire stock affected. It will, perhaps, puzzle Mr. Finlay to find another such record in the history of the disease.

Mr. F. cannot claim any necessary ignorance of these facts, as this thing was not done in a corner, and every facility was afforded to himself and colleagues for examinations and autopsies on any condemned animals they might select.

It would be easy to multiply cases showing the contagious nature of this affection in and around Brooklyn and New York, but I shall not encroach on your valuable pages further than to

mention one or two instances of its conveyance to county districts, where the source of the malady could be undoubtedly traced.

Mr. Wheelock, of Roslyn, L. I., bought two cows from a New York dealer. They sickened soon after, infected the rest of his herd, and six were lost before the plague could be stayed.

Mr. Kenyon was so satisfied it was not contagious that he purchased and took home two of Mr. W's. cows. One of these sickened and died, and infected several of his herd, one of which had to be destroyed to prevent the maintenance of the contagion.

Mr. Post of Westbury, L. I., purchased a cow from a passing herd, said to have come from a swill stable near Brooklyn. She infected his herd and his brother's, and, after heavy losses, they found it needful to kill all the survivors, and begin anew with fresh stock. Mr. Gilbert Miller, of Katonah, Westchester County, took in a Jersey cow, sent from Mott Haven as a present to his son-in-law. Three months later his herd was generally infected, and the Jersey cow and two others more out of six died.

Mrs. Robertson's herd, occupying a piece across the road, suffered from the disease three months later, and five out of twelve died. Mr. Collins, Fiftieth street, New York, had a Jersey cow sick with a sporadic (?) disease of the respiratory organs, from which she recovered under the care of a veterinarian. Her calf was sent to the farm of Solomon Mead, of Greenwich, Conn. The calf sickened and died in a little over two weeks after arrival, but infected the whole herd, five of which had died up to the time of my visit.

One of Mr. Mead's cows broke out and went into the herd of Mr. Griffin, and at the time of my visit Mr. G. had lost one and had two sick.

These are examples of what we meet with every day. If Mr. Finlay can see this disease without tracing similar channels of contagion, I fear that his blindness must be wilful.

I cannot conclude without a reference to Mr. Finlay's sneer at the "stamping out" of the disease. The most superficial acquaintance with the history of the malady would have shown him that this is the only successful method of dealing with this and other fatal contagions of animals.

The method was inaugurated in England in the early part of the eighteenth century by advice of Mr. Bates, surgeon to the Royal Household, for stamping out rinderpest. It was again successfully adopted in the middle of that century to root out a new importation.

It was a third time put in force in 1866, and a fourth in 1877, to suppress invasion of the same plague. It was repeatedly resorted to to cut short ovine variola on English soil, and it is now being put in force against the lung fever. On the Continent of Europe it is now recognized as the only economical and effective mode of dealing with rinderpest, and the following countries have successfully resorted to it for the extinction of the bovine lung plague: Switzerland, Mecklenburg, Oldenburg, Schleswig-Holstein, Denmark, Norway and Sweden and the plague-stricken Holland herself is now putting it in practice. In America it has been repeatedly successful in Massachusetts and Connecticut. It is doubtless possible to surround patients and these products with disinfectants, to secure a certain percentage of recoveries, and let the malady expire by its own self limitation, but the expense of such a course would far exceed the value of the animals saved, and when attempted on a large scale, over half a dozen different states, it would be subject to incessant lapses and failures, and would thus become a means of spreading the disease. All sanitarians must admit that method is the best which will most speedily and effectually extinguish the poison, and do this at the cheapest rate. All of these conditions are met by the *stamping-out* process, and whatever retards or hinders this is essentially unsanitary and wasteful. Into the domain no moral question intrudes; it is a purely pecuniary question, and if it could be solved by the slaughter, not of the sick only, but of all the cattle in the infected districts, it would be a much more economical course than to allow the malady to spread till it reaches our open Western ranges, where all attempts at *stamping out* would only repeat the disastrous failures of the steppes and of the unfenced African and Australian pastures.

Yours &c.,

JAMES LAW.

PROF. WILLIAMS ON PLEURO-PNEUMONIA IN THE UNITED STATES.

THE NEW VETERINARY COLLEGE,
GAYFIELD, NEAR EDINBURGH, March 29, 1879. }

MY DEAR SIR.—Thanks for your card and slips of New York papers duly received. Since first arrival of Ontario with cattle, others have arrived in Liverpool, and I have examined the lungs said by Privy Council Inspectors to have pleuro-pneumonia, and satisfied all who have seen them that no pleuro-pneumonia has arrived here from America; indeed, everybody is surprised that such a gross mistake should have been made. The last lot—seven in number—examined by me had bronchitis, with collapse of the lung, but not a trace of pleurisy nor of pneumonia, yet they were declared by the authorities in London to have typical pleuro-pneumonia. I have the specimens most carefully preserved and am ready to show them to the whole world, and his wife, if necessary.

I should think that the lung-disease at Blissville is something very different from pleuro-pneumonia, as it is stated in the report you sent me that “the diaphragm was covered with extensive congestive spots,” a state of that membrane not known to be associated with pleuro-pneumonia constituted as it is here. I shall be very glad to learn all about the matter, as it is of present importance, not only to America, but to this country, that there should be an untrammelled trade in stock.

Accept my best thanks for your kindness upon this and many other occasions. With kind regards, yours faithfully,

W. W. WILLIAMS.

R. LAIDLAW, Esq., V. S., Albany, N. Y., U. S. A.

45 WEST 29TH STREET, NEW YORK, }
APRIL 20TH, 1879. }

To the Editor of the Times :—

SIR: Under the heading of “The pleuro-pneumonia scare,” I find in your columns a paragraph claiming that the cattle disease

in this vicinity is not contagious pleuro-pneumonia, and adducing the evidence of "The New York College of Veterinary Surgeons" and of Professor Williams in support of the assertion. To those unacquainted with the facts, the array of *apparent authorities* may doubtless have some weight, and as the acceptance of the doctrine might hinder the work of exterminating the plague, some notice seems to be demanded, and I crave the boon of making the needful rejoinder through your valuable columns.

Any one, even though he may be an unprofessional man, if he can appreciate the relation of cause and effect, may soon satisfy himself that we are dealing with a *contagious* disease. He has but to make a tour of a few cow stables in New York City and vicinity, but especially in N. J., wherein the work of *stamping out* has not proceeded so far as with us, and make inquiries of the owners. He will find numerous instances in which herds that were sound until the introduction of a new purchase, were infected by the new animal, and not only lost many of their number, but became centers of infection for adjacent herds. For any one acquainted with the facts to deny contagion, is simply to confess himself unable to sift evidence and reach truth. At Blissville distillery stables, after the owners had culled out all the diseased they knew of in anticipation of a State inspection, we had to condemn and send to the offal dock nearly one-tenth of all animals on the place. In the Prospect Park herd the disease prevailed last September, and we found that nearly all the cow stables in the neighborhood were infected later in the autumn. It was in this vicinity (Fifteenth Street) that I had the first cow slaughtered on February 8th, and several others have been lost in the same and adjacent stables since. New Lots we found to have been most extensively infected last autumn, and here too we have had to kill a number to stay the plague. In the vicinity of Mineola, Hempstead and Roslyn, we find that the disease existed most extensively last year as the result of the introduction of infected cattle, whereas already we have reason to believe there is scarcely a centre of infection remaining. The widest extension of the infection has always coincided with the mild season, (summer and autumn) when cattle run at pasture, and too often mingle freely

on commons and highways, and thereby infect each other.

The non-contagionists allege that the malady is due to inclement weather, exposure, etc., but facts are antagonistic to this theory, as no season furnishes fewer cases than winter and spring, when the weather is the most trying. But, during the winter and spring, the cattle are, for a long period, kept indoors or confined to fenced yards, so that the opportunities for infection passing from herd to herd are at their minimum. If the chances of contagion were as numerous in winter as in summer, there can be no doubt that the rigor of the season would increase the prevalence of the disease, but inasmuch as the cold and variable season which so strongly predisposes to all inflammatory lung diseases is that which presents the fewest cases, we must look for some other explanation which will not contradict the facts. This is to be found only in the increased facilities for contagion in summer, and the comparative absence of such facilities in winter.

All other facts in the history of the disease in America, lead to the same conclusion. It prevailed uninterruptedly in places, like the now memorable Blissville stables, where cattle were brought from all quarters and crowded together in a close building. As soon as a diseased animal was introduced, such a place was infected and remained so as long as occupied. Another grand source of the disease was the dealer's stable, and in the great majority of cases the infection of a herd in a new locality could be traced to one or more cows bought from a dealer. In short, wherever cattle were being constantly changed, and where there was the opportunity of the introduction into a stable of an infected beast, that stable became an infected place and a persistent source of new outbreaks wherever its inmates might be taken.

Nor can the unwholesome conditions of distillery stables on the one hand, nor the privations to which dealers' cattle are subjected on the other, be invoked as causes of the illness. Our western States are no more salubrious than those on the Atlantic sea-board, yet the distillery stables of the west develop no such baleful product, and the steers brought from the west, though they travel one hundred miles for every one traversed by the

New York dealer's cow, yet never fall victims to this disease nor propagate it among the native cattle when stopped fifty miles west of New York. The same is true of the western cows.

Professor William's letter is addressed to Mr. Laidlaw of Albany, and purports to be founded on information furnished by him. What right Mr. L. has to speak on the state of the Blissville cattle I know not, as he is not known to have been present at any *post mortem* there and could not well be without our permission. We do know, however, that he has written in the interest of a small clique of obstructives who testified in the public prints to *there not being a sick animal in the stables, and one of whom had been a student under himself*. This clique represented the "New York College of Veterinary Surgeons," Professor and Dr. Going and Professor Finlay. It not only "emphatically" denied the *pneumonia* theory, but as above quoted denied the existence of sickness altogether. It matters little to them apparently that Professor Spitzka whom they invited to accompany them says that "a thorough examination would neither be permitted nor was it desired," and further "that they found more diseased cattle, and far more intensely diseased individual cases, than Dr. Liautard, who examined the same cattle two or three days previous." As little does it seem to matter to this party that when present by permission at our first killing under the State authority at Blissville, they were invited to select any of the condemned animals for *post mortem* examination, they availed themselves of the offer, and found in the animal they supposed to be sound, the most perfect specimens of enlarged and consolidated lung, the result of pleuro-pneumonia.

A remark in Prof. Williams' letter seems to imply that he had been informed the lungs were *collapsed*. A *collapsed* lung is one with all the air expelled, so that the size of the organ is greatly diminished, its color changed to a dull red, and its weight unchanged. If slightly dropsical as well, the weight will be slightly increased and the color of a bluish red (splenization). If still more dropsical, the weight is greater, but the lung becomes clear and translucent, like liquid gelatine or frog's spawn. Now, in the lungs of the condemned cattle selected for examination by the

Going Bros. and Finlay there was neither collapse nor translucency, but a great enlargement and consolidation, with a granular state of the cut surface, and the whole interspersed with the characteristic yellowish white markings. One set of lungs weighed before their eyes amounted to 26 lbs., in place of 3 or 4, as they would have been in health. The testimony to this is ample—professional and otherwise. From these facts may be inferred the reliability of the men who on this side of the Atlantic are seeking to obstruct a work which is as vital to our live stock interests at home as it is to our foreign cattle trade.

The two parties who have united their forces for this effort at obstruction seem to be about equally ignorant of the nature of evidence. "The New York College of Veterinary Surgeons," sitting quietly at their desks in this city, set forth in a report to the British consul that "*the disease under inspection by the Privy Council of Great Britain is not pleuro-pneumonia.*" On his part, Professor Williams, sitting in his easy chair in Edinburgh, Scotland, evolves from his own inner consciousness "*that the disease at Blissville is something very different from pleuro-pneumonia.*" Ordinary pathologists prefer to see the cases they pronounce upon, but to these eminent men an interval of 3,000 miles between physician and patient appears to be a decided advantage.

Williams' argument appears to be that the steers *ex* the "Ontario" which were killed at Liverpool, had not the contagious pleuro-pneumonia, therefore the cattle at Blissville had not. But the steers were shipped on the "Ontario," at Portland, Me., which port they reached by the Grand Trunk R. R. of Canada, so that they had never been within 300 miles of Blissville. The present attempt to connect the sick cattle on the "Ontario," with the sick at Blissville may mislead a careless or superficial reader, but to the considerate can only condemn its authors. Inasmuch as cattle are never carried from such a place as the Blissville stables westward, we might as logically deduce the nature of the cattle disease at Blissville from the known character of the present plague among the horned cattle of Turkey.

Without professing to decide as to the nature of the disease

affecting the cattle on the "Ontario," I will only add that neither from the observation of the fat cattle in our eastern stock-yards, nor from information furnished from the western States, have we any proof that contagious pleuro-pneumonia exists in the west. If, however, it is neglected now in the circumscribed eastern localities where it does exist, it will certainly reach the west sooner or later, and with most disastrous results.

As Prof. Williams has repeatedly lent his name to the obstructives on this side of the Atlantic, and as his letters have been heralded by statements that he was "the leading veterinary pathologist" and a "distinguished authority on such matters," I feel compelled, though very reluctantly to state some wholesome truths.

First, about the "Ontario" cattle, about which I have no dispute with any one, and will not be dragged into a controversy, having never seen them. Prof. Williams says "*EVERYBODY is surprised that such a gross mistake should have been made.*" Prof. Duguid, Veterinary Inspector-General, writes: "*PROFESSOR WILLIAMS WAS THE ONLY ONE who had any doubt about the nature of the disease; Professors McCall and Walley were quite satisfied that it was pleuro-pneumonia.*"

I shall not undertake the invidious task of comparing Prof. Williams with others as an author. But his present blameworthy course and the claims made for him by the would-be obstructives demand these statements:

1st. That when rinderpest invaded England in 1865, Williams, then practising in Yorkshire, strongly urged that it should be met by medicinal treatment, and thereby contributed as far as he could to the preservation of the sick, the increase and diffusion of the poison, and the exceptionally heavy losses that befel that county.

2d. That about two years ago Prof. Williams was convicted in a court of justice of having condemned a *consumptive* cow, under the impression that her disease was *pleuro-pneumonia*.

These truths can easily be proven by the public prints of the time, and while I profoundly regret the necessity for recalling them, I have been left with no alternative, as Prof. Williams

persists in giving his countenance to the wrong, and in seeking adulation at the expense of one of the most valued industries of America. Yours, etc.,

JAMES LAW, F.R.C.V.S.

(*The New York Times* has so far failed to publish the above.)

POST MORTEM EXAMINATION OF COWS AFFECTED WITH PLEURO-PNEUMONIA.

By Prof. A. A. HOLCOMBE, D.V.S.

In Blissville, Long Island, February 21, 1879, under supervision of General Patrick, Prof. Law, aided by Drs. McLean and Bell, made post mortem examination upon three of the cows condemned to death from contagious pleuro-pneumonia. Subject No. 1 was a fine medium sized cow in good flesh, but presenting marked objective symptoms of the disease, the respiration being rapid, short and labored, the cough frequent and suppressed, and the temperature above 104.6° Fahrenheit. After destroying her life the left front leg and other muscular tissues were removed, the ribs cut across, and the left lung exposed. To one unacquainted with the characteristics of the specific form of pleuro-pneumonia, the conclusions would have been at once reached that there was an error in the diagnosis, for this lung presented a nearly, if not quite, normal appearance, but removing it and exposing the right lung there was seen to be an almost complete consolidation of the entire tissue, with extensive adhesions to the costal plura. The diaphragmatic pleura showed patches of effusion upon its surface.

Making a longitudinal section through the lung, the beautiful marbled appearance common to this disease was seen, with commencing suppuration in the parts farthest advanced in the diseased process; a peripheric lobule presented a marked, acute red infraction as the result of obliteration of the supplying nutritive artery. The pleural cavity contained but little effusion, while the pericardium was entirely devoid of lesions.

No. 2 was also a medium sized cow rather thin in flesh, with

a stiff gait, arched back, frequent cough, short rapid respirations, and marked auscultatory symptoms on both sides of the chest. The post mortem examination revealed the right lung in the first stage of the disease, it being marked upon the surface by congestion of the superficial veins and its consequent collateral œdema. The diaphragm was severely congested over a large part of its surface. The left lung was consolidated in nearly its entire extent, while the pleural adhesions were more limited than in the previous case. Section revealed the same internal appearance as in No. 1. The pericardium was thickened from effusion and covered in places with extensive exudation of coagulated lymph. Even after the escape of some of the serum from the points of incision, these lungs weighed twenty-six pounds.

No. 3, a small cow, in poor flesh, was the last subject for autopsy, and showed symptoms very similar in all respects to No. 2. The left lung when exposed was for the most part healthy, showing only some limited congestions. The costal pleura toward the inferior part of the chest was covered with considerable exudation. The right lung was about two-thirds consolidated and firmly attached to the costal pleura. The process in nearly half the consolidated part had reached such a stage that the tissue was beginning to break down. The unconsolidated tissues were marked with congestion.

VETERINARY COLLEGES.

COMMENCEMENT EXERCISES OF MONTREAL VETERINARY COLLEGE.

The examinations of the students of the College, which have been in progress during Monday, Tuesday and Wednesday, were concluded on Thursday by a public examination, in the presence of a large number of professors and friends, conducted by the following Board of Examiners, appointed by the Council of Agriculture, P. Q., viz.: Alex. Waddell, M.R.C.V.S., Quebec; Williamson Bryden, V.S., Boston; Noah Cressy, M.D., V.S., Ph.D.,

Amherst, Mass.; Arch. McCormick, V.S., Beauharnois; A. O. F. Coleman, V.S., Ottawa; Chas. Levesque, V.S., Berthier en haut; C. J. Alloway, V.S., Montreal; A. J. Couture, V.S., Montreal; Dr. Tetu, Riviere Ouelle, P. Q.

The standard of examination was unusually high, and called for expressions of approbation from the whole Board, each student being highly complimented by the examiners on each subject.

The following students, who had fulfilled the full *curriculum* and passed satisfactory written examinations, were examined by the whole Board orally, and having given satisfactory evidence of their proficiency, were admitted as members of the profession, viz.: Isaac J. Miles, Charleston, Illinois; W. L. Williams, Argenta, Illinois, Floret S. Thomas, M.D., Hanson, Mass.; H. D. McMartin, Montreal; Charles Winslow, Rockland, Mass.; D. Lemay, Bord a Plouff, P. Q.; M. C. Baker, Dunham, P. Q. French department—Victor Theodule Daubigny, Lachenaie, P. Q.; Henri Audrain, Montreal; Alphonse Levesque, Montreal; Hector Bergevin, St. Timothe, P. Q.

At five o'clock a large assemblage of professional gentlemen, prominent citizens, and the majority of the members of the Council of Agriculture, assembled in the lecture room of the College, to witness the distribution of the prizes and the conferring of the diplomas. Among those present we noticed Hon. G. Ouimet, Commissioner of Public Instruction, P. Q.; Hon. S. Norquay, Premier of Manitoba; Hon. L. H. Beaubien, Rev. Father Pilot, W. W. Ogilvie, Esq., Professors Craik, Osler and Bell, etc. Letters of regret for unavoidable absence were received from Hon. H. G. Joly, Premier of Quebec; Professor J. W. Dawson, Principal of McGill University; L. H. Massue, Esq., M.P., President of the Council of Agriculture; Hon. M. H. Cochrane and others.

The Hon. G. Ouimet occupied the chair, and presented the prizes and diplomas, afterwards addressing the pupils, congratulating them and giving them advice as to their future careers.

Appropriate addresses were also made by Mr. Waddell, Professor Cressy, Dr. Tetu, Hon. L. H. Beaubien, E. A. Barnard, Esq., Director of Agriculture, Rev. Father Pilot, and others.

COMMENCEMENT EXERCISES OF TORONTO VETERINARY COLLEGE.*

For the past week the annual examinations of the Ontario Veterinary College have been in progress, and yesterday the results were made public, when the prizes were presented to the successful competitors by His Honor the Lieutenant-Governor, in the College Museum.

A large number of persons interested in the school were present by invitation to witness the closing exercises. Among these were His Honor Lieutenant-Governor Macdonald; Hon. Adam Crooks, Minister of Education; Hon. A. S. Hardy, Provincial Secretary; Hon. S. C. Wood, Minister of Agriculture and Provincial Treasurer; Professor Buckland; Dr. Thorburn; Dr. Coleman, V.S., of Ottawa; Dr. E. A. A. Grange, V.S., of Guelph; and other prominent veterinary practitioners from different parts of the Province.

After an inspection of the premises, which were found in the most perfect order and showing marked evidences of the most scrupulous neatness and good taste on the part of those in charge, the party adjourned to the museum.

Dr. Smith, President of the College, occupied the chair. His Honor the Lieutenant-Governor was seated on his right, and Hon. S. C. Wood on his left.

After some remarks briefly made by Prof. Buckland, tracing the progress of the institution to the present time, the following gentlemen were successful in passing their final examinations, and received their degree: H. Ackerill, Belleville; J. Armstrong, Bayfield, Ont; G. Bateman, Port Perry; E. W. Bartram, Ovid, Mich; E. A. Blackwell, London, Ont; H. Butcher, Trafalgar, Ont; K. H. Cleaver, Allentown, Pa; G. W. Coppis, Madisonburg, Indiana; T. Fisher, Georgetown; S. J. Foelker, Allentown, Pa; T. W. Foster, Belleville, Ont; O. B. French, East Bloomfield; J. H. Frink, St. John, N. B.; J. E. Gemmel, Toronto; Neil Grant, Sombra; Chas. Green, Richmond, Ill; Fred Green-side, Guelph; F. J. Hammil, Keenansville, Ont; J. H. Hickenberger, Catasauqua, Pa; Jas. Massie, Smith's Falls; Chas. Mathews, Brougham, York; F. W. Mathews, Toronto; F. W.

McDonagh, Goderich; N. McNally, Honston, Texas; J. H. Miller, Wadsworth, Ohio; J. C. Milnes, Cedar Rapids, Mich; E. C. Oliver, Claude, Ont; E. Prentice, Chicago; W. Rose, Durham; J. G. Rutherford, Peeblesshire, Scotland; John Stephen, Collingwood; B. White, Whitby.

The following gentlemen constituted the Board of Examiners: Mr. Cowan, Galt; Mr. Coleman, Ottawa; Mr. Cæsar, Port Hope; Mr. Duncan, Goderich; Mr. McNaught, Seaforth; Mr. Wilson, London; and Dr. Thorburn. The Board was assisted by several other gentlemen, graduates of the College, who were present as visitors.

After the presentations had been made, His Honor the Lieutenant-Governor complimented the prize-winners. Although he did not profess to have a knowledge of veterinary science, yet as a Canadian he took an interest in its progress, and expressed his willingness to forward the interests of the institution in any way he could. Hon. Adam Crooks also delivered an address, after which the audience dispersed.

*Extracts from the Toronto Globe.

REPORT OF CASE.

TORSION OF THE UTERUS IN A MARE.

COLUMBUS, Ohio, }
MARCH 22d, 1879. }

Editor of Veterinary Review :—

A valuable mare at the end of the ninth month of gestation was recently observed by her owner to be suffering severely from colic. She was incessantly pawing, kicking at the belly, looking round at the flanks, lying down and rolling; there was also the frequent evacuation of small quantities of hardened fæces and ineffectual attempts at micturition. The services of Dr. Rose of this city, a successful veterinarian in large practice were obtained; an anodyne was administered and this was followed by a cathar-

tic: the anodyne quieted the mare to some extent, but the cathartic produced no manifest effect. When the doctor first saw the mare, he remarked that her behavior reminded him of a case of *torsion of the uterus* that had previously come under his notice; and this suspicion would at once have been verified by an examination per vaginum but for an objection made by the owner that possibly such interference might excite uterine contraction and result in the loss of the colt. The mare continued sick and the constipation was not relieved although castor oil, backraking, warm water injections and aloes were successively employed. At the end of a week, the mare broke from her stable, walked a couple of miles, laid down and died.

The post mortem showed but little tympanitis and no disease of the bowels, the uterus contained a large foetus, and several pints of fluid blood. When the contents of the uterus had been removed it was plainly seen that the whole organ had been rolled over, the place of twist being at the junction of the vagina and uterus. The suspensory ligaments of the uterus between which the rectum passes were so tightened by the torsion that an absolute obstruction of the intestine had been produced, and hence the failure of cathartics. Anterior to the obstruction was an accumulation of fœcal matter.

Is it not probable that such cases are more frequent than has heretofore been supposed? This is the third case that has come to the knowledge of the writer and the second that has come under his immediate notice. The diagnosis is easily made by examination per vaginum and per rectum; it should be made early in order to determine by what means a biable colt shall be saved.

N. S. TOWNSHEND.

IN THE AMPHITHEATRE OF THE DEAD.—A prosector of anatomy, speaking to the professor in the dissecting room, said: "Sir, there are no more bodies in the dead-room." "I know it," answered the professor. "I distributed twenty subjects yesterday." "Oh," said the prosector, "some must be brought in, *it looks so sad without any*."

AMERICAN VETERINARY REVIEW,

JUNE, 1879.

ORIGINAL ARTICLES.

REPORT ON THE DISEASE IN CATTLE KNOWN AS "ANTHRAX."

BY PROF. D. McEACHRAN, F.R.C.V.S.

(Continued from page 59.)

HEALTHY BLOOD.

The fluid which circulates in the tubes called blood-vessels, serving the double purpose of carrying nutriment to and removing waste material from the various organs of the body, is not, as might be supposed from mere optical inspection, a homogenous fluid, but consists of two kinds of organized particles, called corpuscles or blood globules, which float in a transparent colorless fluid called the *plasma* or *liquor sanguinis*.

The red corpuscles are by far the most numerous, and they give the fluid its characteristic red color; they are round biconcave discs, at one time supposed to be cells, but now looked upon as homogeneous masses of stroma without either nucleus or enclosing membrane. "The color is due to the presence of a peculiar coloring matter which can be separated from them without destroying them, being attached either by mere imbibition after the manner of a dyed fabric, or else by some easily disturbed chemical affinity."

This coloring matter in a healthy condition is quite absent from the liquor, but in several diseased conditions, notably that now under consideration, it leaves the globules and becomes diffused in the plasma. It can also be artificially produced by simple dilution with water, freezing and melting again, repeated electric discharges, separation of the gases of the blood, the addition of salts of the bile acids, of either chloroform or of alcohol in small quantities.*

The white corpuscles are in health few in number, about $\frac{1}{500}$ ths to $\frac{1}{350}$ ths of the red. They are very much larger than the red, and appear to be granular masses of a spherical form, containing within them nuclear bodies and granular matter. The analysis of the blood of the horse by Hoppe shows that,

In 1,000 parts of blood are contained:

Corpuscles	326.2
Liquor sanguinis.....	673.8
	<hr/>
	1,000

In 1,000 parts of corpuscles:

Water	565
Solids.....	435
	<hr/>
	1,000

In 1,000 parts of liquor sanguinis:

Water	908.4
Solids.....	91.6
	<hr/>
	1,000

The solids of the liquor sanguinis consist of:

Fibrine.....	10.1
Albumen.....	77.6
Fat.....	1.2
Extractives.....	4.0
Soluble salts.....	6.4
Insoluble salts.....	1.7
	<hr/>
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* Jones and Sieveking.

The fibrine is the plastic material of the blood, and whatever destroys or lessens the quantity of fibrine materially reduces the consistence and viscosity of that fluid, and may render it less fit or altogether incapable of carrying on the vital functions which the blood has to perform.

Professor Toussaint, of the Toulouse Veterinary College, in concluding some inferences, deduced from some experiments conducted by him to prove the action of bacteria when injected or introduced by inoculation, says: "Inoculation and subcutaneous and intravascular injection of anthrax blood did not always give rise to generalized anthrax. An old ass resisted repeated attempts of this kind; I have also failed with dogs; and I have also not once succeeded in communicating the disease to pigs three or four months old, no matter what means were employed. But if these animals did not die of anthrax, the local lesions produced were nevertheless of the greatest interest, as they throw light upon a property possessed by the bacteridiæ which enables us to explain the inflammatory phenomena observed in various subjects. The local effects of these organisms appear to me to result from the presence of a soluble matter (diastase) secreted or excreted by the parasites, and which enjoys to a high degree, though this varies according to the species which nourish the *bacteridiæ*, phlogogenous properties." He further says, in order to ascertain more exactly the part played by the *bacteridiæ* and their *excreta*, "I had the anthrax blood filtered and injected the filtrate. This experiment only led to the production of a general inflammation altogether local. The inoculation or injection of bacteridiæ, cultivated according to Pasteur's method, has given rise to the same inflammatory phenomena as the anthrax blood produces. The difference in the two experiments was due to the fact that bacteridiæ had lived for a certain *sur place* and in becoming multiplied had produced a certain quantity of phlogogenous matter. From the results of these experiments it appears to me that along with these bacteridiæ there exists a substance endowed with intense phlogogenous properties, which should be largely taken into account in interpreting the lesions which are observed in anthrax. These experiments also demonstrated that the phlogogenous mat-

ter is more or less active according to the subjects from which the bacteridiæ are obtained. The animals which I have studied may be ranked in the following order : rabbit, guinea pig, sheep, ass, horse and dog. In this order are disposed the inflammatory lesions of anthrax and those which are developed by subcutaneous injections in the refractory animals.”—(*Veterinary Journal*.)

Toussaint is not singular in supposing that the vitality of the anthrax poison is not due to the bacteria alone. Bollinger points out the existence of what he calls bacteria germs, which have also been noticed and described by Professor Siedamgrotsky of Dresden Veterinary College. He describes the anthrax bacteria as fine bodies in the form of rods, either straight or bent at obtuse angles and always motionless. Their length varies considerably. They are jointed so that their outline is irregular ; each rod appears made up of segments, every one of these being short and cylindrical and about half as long as it is broad ; the end cylinders only in each rod look shorter and rounder. In well developed rods the junction of these segments is not difficult to make out, and it is made more distinct after soaking them in water, as recommended by Bollinger. The bacteria germs are so small that they cannot be measured ; they are round, very rarely oblong, bodies, and have no apparent independent motion. He describes them as minute ball-like forms, which swim freely about in the fluid ; they are not numerous nor very conspicuous, and unless very great care is taken they are liable to be obscured by external matters introduced by coarse manipulation. Particular amœboid cells are not unfrequently met with, on the surface of which are observed by close microscopical inspection, very minute and somewhat round pointed protuberances. These are best distinguished on the surface of the cell, as on the under and upper surface it is difficult to satisfy ourselves of their existence. It is advanced that bacteria germs preferentially attach themselves to the white blood globules. This surmise will be further confirmed by the fact that now and again these globules are found to be star-shaped and furnished with fine points, the delicateness of which distinguishes them at once from the thick protoplasmic protuberances ; from the appearances of these he says one is

driven to the conclusion that they can be nothing else than young, short, anthrax bacteria, derived from the bacteria germs.

With regard to the hypothesis that the anthrax bacteria produce something which has a chemical action on the bodies of animals, the following well known fact may be adduced as evidence. When anthrax blood is inoculated in the texture of the skin, certain effects follow in the form of inflammatory swelling. This tumefaction has no relation so far as extent is concerned to the quantity of bacteria and bacteria germs; and the presence of these alone cannot account for this result, so that one may surmise the production of some chemical matter which circulates more quickly in the lymphatics of the connection tissue than the bacteria.—(*Veterinary Journal*.)

The most recent investigations on this subject are to be found in an able paper by Dr. Koch, entitled “The *Ætiology of Splenic Fever based on the history of development of *Bacillus Anthracis*.*”

Dr. Koch's paper furnishes us with the following facts: The number of bacilli found in the blood varies with the animal; in the guinea pig it was enormous, sometimes even exceeding that of the corpuscles; in the rabbit much smaller, so that sometimes several drops had to be examined before any were found; in the mouse often *nil*.

In the blood of dead animals or in other suitable fluids, the bacilli grow to very long, straight, leptothrix-like filaments (within certain limits of temperature, and with the presence of air) while the formation of numerous spores goes on at the same time.

The spores of *bacillus anthracis* under certain conditions of temperature, nutrition and presence of air, develop immediately to the bacilli, which were seen in the blood.

Dilution of the animal fluid containing bacilli with a moderate amount of water makes no evident difference, but a large quantity kills the bacilli. Dampness, then, such as that to which a body killed by splenic fever is exposed when buried to some depth or left in the fields or skinning yards, or the excreta of some sick animal are exposed, does no harm to the bacilli, while it hinders the evaporation of the nutritious fluids in which the bacillus has done its harmful work.

Let only the spores be formed, and specimens of dried bacilli will be as fatal four years after as ever they were; but the fibres will not maintain their activity for more than five weeks.

Koch thinks that the best way to rid ourselves of this "destroying angel" is to utterly destroy all substances containing bacilli, but fears that it is impossible to adopt so radical a measure; he thinks much might be done by placing all affected bodies in a dry pit to which air could not enter, and at so great a depth as to have a temperature always below 15°C . (*Quarterly Journal of Microscopical Science*.)

THE MANNER IN WHICH DEATH IS PRODUCED IN ANTHRAX.

Having thus reviewed the different investigations as to the nature of bacteria and their spores or germs, we will now briefly consider the manner in which they cause death.

Two theories are advanced, viz: that they cause death by removing from the red globules of the blood the oxygen necessary for hæmatisation. That is to say, oxygen is necessary to render the blood capable of supporting life, and in the healthy condition it is constantly being interchanged for carbonic acid, an impurity resulting from the blood's function as a sewerage system for the tissues in removing waste products. The bacteria, by using up this oxygen in the blood, produces a condition similar to what would take place were an animal inclosed in a chamber exhausted of air. Among the advocates of this theory are Pasteur, Joubert, Bonley, Bollinger and Toussaint.

Professor Toussaint, however, from recent experiments has somewhat modified this view by discovering that death is often caused by obstruction of the circulation by masses of bacteria. Bollinger (Ziemssen Vol. III, page 388), says: "By deductions from numerous experimental, chemical and anatomico-pathological results, I believe that I have adduced the proof that the action of anthrax bacteria (which are present in enormous numbers in the blood of animals suffering from apoplectiform anthrax, which is very common,) is apparently this: The bacteria, by rapid increase in the blood, by virtue of their powerful need for oxygen and their enormous chemical affinity for the same, absorb it with

great greed and in large quantities, thus taking it away from the red blood-globules. All the symptoms of the sick animals while alive—dyspnoea, cyanosis, clonic spasms, dilated pupils, finally depressed temperature, and the appearance of asphyxia—all of these symptoms, as in every case of carbonic acid poisoning, are explicable by the above detailed mechanism, which quickly results in a lack of oxygen and an excess of carbonic acid in the blood. Likewise the post-mortem examination reveals changes similar to those which we are accustomed to find after death due to lack of oxygen and overloading of the blood with carbonic acid, engorgement of the venous system, dark tarry character of the blood, slight hemorrhages in different organs, cyanotic coloring of the parenchymatous organs, hyperæmia of the lungs.

The overloading of the blood with carbonic acid is, moreover, greatly increased on account of the more rapid oxygenation that is going on, yielding a further quantity of carbonic acid as a product of combustion. In this manner I explain those lightning-like and apoplectiform cases where the animals suddenly sink to the earth and suddenly expire."

A year ago Professor Toussaint, of the Toulouse Veterinary College, discovered that in many cases death by bacteria was caused by obstruction of the circulation by masses of these rod-like bodies. On examining the mesentery, a thin transparent membrane, immediately after death, extremely important lesions were observed. "A large number of capillaries were filled with *bacteridie*; in many of them the vessel was so obstructed by these particles that blood corpuscles could not be seen; often even the vessels were not discoverable save by the presence of the *bacteridie*, which marked their course as if they had been injected. The arterioles themselves were obstructed by means of *bacteridie* behind which the blood corpuscles were accumulated.

An examination of other parts of the body led to the discovery of lesions of the same nature; intestinal villi were found to be injected at their summit with a mixture of blood and *bacteridie*. These obstructions were most observable on the lungs. He says, in isolating a layer of vessels in the lungs, he found that these rod shaped bodies literally injected and crammed these

vessels; they lay in every direction and gave the capillary network a peculiar aspect. There were very few blood corpuscles among them.

He is therefore of the opinion that these lesions are sufficient to account for death occurring and that vascular emboli are the immediate cause of death. The formation of the emboli, he says, can be seen in the living rabbit after fixing the creature and drawing a portion of the omentum from the abdominal cavity. The circulation of the blood can be observed through the membrane. In this way one may observe for an hour or more a beautiful sight which in this instance has altogether a special interest from the presence of the *bacteridiae* and the formation of the lesions just described, the process of development of which the observer can follow with ease. (*Veterinary Journal*, Vol. VI, page 421.)

SYMPTOMS.

The symptoms vary according to the form which the disease assumes.

General anthrax, apoplectiform or lightning-like anthrax, the form most commonly seen in cattle and sheep, runs its course with frightful rapidity; they often drop as if they had received a blow, go into convulsions and while the heart beats tumultuously the pulse is imperceptible or nearly so, the breathing is short, quick and difficult as if suffocating, the mucous membranes, especially of the vulva and anus, are red and swollen; muscular tremors and clonic spasms, a rapidly lowering temperature and in from ten to twenty minutes she is dead. In some cases so sudden is the death that they drop and expire as if shot. Not unfrequently they are seen apparently in good health and in a few minutes are found dead. This form of the disease is the most common and often occurs in sporadic cases, or only a few animals on a farm, and the suddenness of the death is apt to lead to the supposition that they have been poisoned. It is worthy of note too, that the best animals usually are the first to be attacked.

In some cases the disease does not run its course so rapidly. The milk secretion stops suddenly, shivering, increased superficial

and internal temperature; a bloody or sero-sanguinous fluid escapes from the nostrils and anus or is mixed with the fæces. The symptoms above described are present but in a more chronic form, and its course may be protracted for twenty-four hours.

Bollinger describes an intermittent variety, in which irregular remissions and intermissions may be observed lasting a few hours, often six, twelve or twenty-four hours. The breathing during a paroxysm becomes labored and gasping (dyspnoea); such mucous membranes as are visible grow cyanotic; the extremities cool; the convulsions become violent; opisthotonos and convulsive contractions of the muscles of the eye are observed, so that only the white of the eye remains visible. The animal grows very weak; can no longer keep itself upon its feet; the temperature falls below the normal standard; the extremities become cold; the pupils dilated to their utmost, and death follows in the form of asphyxia, generally twenty-four, thirty-six, or forty hours after the first appearance of the symptoms.

The third form usually described as anthracoid erysipelas, also as "black quarter" or "quarter ill," differs only in there being a localization of the disease in various parts of the body; usually, however, even in this variety yellow serous exudates take place in all the connective tissues, the internal vascular organs are usually enlarged and engorged with the black tarry-looking fluid. In the form known as *black quarter*, which is not uncommon in many parts of this country, it usually occurs in young thriving stock, in which no indications are observed until the owner's attention is attracted by one or two being found dead. Most cases afford opportunities for studying the symptoms, and many even for applying treatment. In this case we have all the symptoms of septic poisoning, dilated pupils, dullness, the head being carried low, muzzle dry, pulse quick, temperature high, 105° to 107° , stiffness or inability to move; he may be found supporting himself against the fence or lying down with the head thrown back to the flank unable to rise; local swellings are found in different parts, such as the quarter, back, neck or sub-thorax; the swelling at first is hot and tender, but it soon becomes cold, the skin and hair over the part feel dry and

harsh ; gases are generated under the skin, giving the swelling a crackling feeling when rubbed. The appetite and rumination cease ; the symptoms rapidly become aggravated, the temperature rapidly falls, coldness of the surface and extremities, shivering, weakness, difficult suffocating breathing, and an imperceptible pulse, all betoken approaching dissolution, and ere long with fixed and staring eye, unable to rise, he becomes convulsive and dies in a state of coma.

POST MORTEM EXAMINATION.

There is a marked tendency to decomposition, the body is usually very much distended from gas, crackling swellings from gasses under the skin are found in numerous parts of the body.

On removing the skin a considerable escape of black, tarry-looking blood takes place from the engorged cutaneous vessels, which stains the whole surface of the body, giving the skin an unusually bloody appearance.

All the connective tissues are infiltrated by a citron-colored serosity. The whole muscular system is pale and soft, except the heart, in the muscular structures of which large collections of thick black, putrid blood are found. The spleen in most cases is very much engorged, its parenchyma is black, soft and friable, its covering membrane studded with purple or violet colored spots. The lungs are engorged, black and crepitating. The abdominal and pleural cavities usually contain a quantity of colored serum. The liver is very soft and nearly bloodless, of a pale yellow color resembling boiled liver. The kidneys in some cases in a similar condition, and in others engorged and of a walnut color.

In the local form we may have all these post-mortem appearances, and in addition the discolored gangrenous anthrax tumors in the quarters or other parts of the body.

TREATMENT.

From what has been said of this disease it will readily be conceived that treatment will be doubtful in its results, and in

most cases useless. Chief among the remedies provided are chlorate of potash, turpentine, carbolic acid, blood-letting, saline preparations, and locally—hot fomentations, stimulant embrocations and setons.

PREVENTION.

This is of far more importance to those for whom this paper is intended than medical treatment. It will be seen from the remarks on the causes of this disease that our knowledge on that subject is far from accurate, yet sufficient is known of the circumstances which favor the development and spread of the anthrax poison to enable us to suggest measures for its prevention which, if carried out, will be effectual.

The carcasses of all animals dying of this disease should be immediately carried (not dragged along the ground and through the fields), to the nearest convenient place, away from any pasture field, in a dry place, or at least one which is not a source of water supply. If possible they should be burned, a process in Canada usually easily accomplished by placing them in the midst of a pile of brush which is to be burned in clearing the land, where it is not situated in land to be used as pasture. Care must be taken however that even the ashes are buried, for such is the vitality of the spores that even the process of burning cannot always be depended upon for their destruction. Of no less importance is the destruction by burning and burial of all fluids or excrement, blood, hair, hoofs, horns, hides, &c. Although in France and some other countries where anthrax commonly prevails, knackers under certain restrictions and on the adoption of certain precautions are allowed to skin the bodies and boil the carcasses for oil, yet so many accidents arise to persons engaged in this work that its practice is not recommendable. Where it is intended to skin them, the person undertaking it should be very careful that he has not any scratches or broken surface on his skin; rubber gloves should always be worn when handling them.

It has been invariably found that where deep careful burial,

away from the pasture fields, of the dead animals, with drainage and improvement of the land by a better system of cultivation has been practiced, the mortality from anthrax has been lessened enormously, and in many instances, even in what have long been anthrax districts, it has almost disappeared.

Happily in Canada we know this disease only as an occasional occurrence, usually confined to one farm in a neighborhood; such, no doubt, was once the case in the districts of Russia, Hanover, France, and other continental countries where the animal loss is now counted by hundreds of thousands. We have it now in our power, by adopting proper means, to cause its disappearance altogether, whereas neglect of such measures will unquestionably lead in time to its becoming a source of very serious loss annually to the country.

It has also been found that when an outbreak of the disease does occur, the removal of the animals to another farm five or six miles distant will be attended by cessation of the disease. In adopting this plan, great care must be exercised to prevent them coming in contact with neighboring stocks, by allowing them on the journey, to go into fields among other stock. Precaution should also be taken to prevent them meeting other animals on the road thither. Any carelessness in this respect should render the owner of the diseased animals liable for any loss entailed by others as a result of such carelessness.

The woodwork of the barn or sheds in which they have been kept should be removed and burned, the heavier structures being scraped, well washed and scrubbed, and freely white-washed with lime and carbolic acid. The food should be carefully scrutinized, all smut, rust or other form of fungi should be carefully separated, and nothing but good wholesome food and water given them.

In addition to the separation of the healthy from the sick animals, it is advisable to administer carbolic acid in doses of two drachms in gruel night and morning; give also acidulated drinks, say a drachm of sulphuric acid in half a pailful of water to each of them for a few days.

It is important to observe that whoever has to do with the

handling or cutting up of the bodies should not have anything to do with the attending or feeding of the healthy ones.

I have the honor to be, Sir,

Your obedient servant,

D. McEACHRAN, F.R.C.V.S.

The Honorable

The Minister of Agriculture,

Ottawa.

THE THERMOMETRY IN CONTAGIOUS PLEURO-PNEUMONIA,

BY ED. DELE.*

The inquiries which I have the honor of presenting to the Academy of Medicine of Belgium, were made *exclusively* upon cattle, in a physiological as well as a pathological condition, specially concerning the exudative contagious pleuro-pneumonia which prevails amongst the dairies of our large cities.

The thermometer that I have used was a mercury centigrade instrument, measuring from 2° to $+5^{\circ}$, 0,47 centimeters long, and each degree divided by $\frac{1}{10}$, each corresponding to a little less than one millimeter.

In cattle, it is by the introduction of the instrument in the rectum that the temperature is best taken; this is easy; it is sufficient to prevent the animal from moving, which is readily obtained by scratching the animal on one side of the tail while that organ is raised.

I have remarked, in the *Veterinary Journal*, that the use of the thermometer is a part of the examination of English veterinarians who apply for appointment of inspectors of ports.

Physiological temperature of cattle.—I do not pretend to be the first who has noticed the normal temperature of cattle; as

* Translated from the *Annales de Medicine Veterinaire* Brussels, by A. Liautard, M.D., V.S.

proof of this, I may mention the writings of Dr. Krabbe of Copenhagen, which I have already published.

Before mentioning the results of his own experiments, Dr. Krabbe indicates those obtained by Hunter, $37^{\circ}5$, by Sanderson, $37^{\circ}9$ to $39^{\circ}2$, by Fleming, $38^{\circ}5$ to $39^{\circ}3$, by Davy, $38^{\circ}9$; then he adds that out of 446 observations, taken on 24 animals, he had obtained an average of $38^{\circ}8$.

From the observations that I made, I came to the conclusion that the extreme variations of temperature were between $37^{\circ}5$ and $38^{\circ}9$, in average $38^{\circ}2$.

Temperature in diseases.—I believe, if not in error, that Prof. Gamgee was the first to notice the elevation of the temperature of cattle in rinderpest, in 1865. After him, Doctor Burdon Sanderson, of England, in 1866, and Gerlach, of Germany, 1867, corroborated his observations, and Stockfleth, of Denmark, noticed also the conditions of temperature in foot and mouth disease.

The Belgian government, having learned of the works of Doctor Sanderson, requested me to ascertain their correctness, when the rinderpest existed in Belgium in 1865 and following years. My observations, entirely agreeing with those of Prof. Gamgee, were reported to our government.

Veterinary journals, at different times, reported similar experiments. For instance, the *Annales de Medicine Veterinaire* of Belgium contain an analysis, made by Mr. Ch. Siegen, of an article by M. Schmelz, treating of the temperature in different diseases of animals. For Schmelz the normal heat is $29^{\circ}5$ (Reaumur). In resuming his observations, taken on horses, he concludes "that each diminution in the temperature is a favorable sign in the course of acute diseases, even when the other symptoms remain stationary."

M. Schmelz only observed on the horse; as far as it concerns plenro-pneumonia of cattle, I cannot agree with him. Indeed, the figures that I have obtained, have proved to me that though the internal temperature of the body of animals thus affected may diminish, the ordinary symptoms of the disease may become aggravated.

Another number of the *Annales* contains the analysis of a report made by M. Peters, of Mecklenburgh, upon the variations of the internal temperature of domestic animals, and upon the mode of appreciation of these variations. But the interesting experiments of Peters were made only on diseases of horses and in variola of sheep.

Concerning *contagious pleuro-pneumonia*, the treatises upon the temperature are more recent. In the annual reports of the Veterinary Department of the Privy Council of England, for 1873 and 1874, Prof. Brown mention the subject extensively.

It is *perhaps* unknown, that, in Great Britain, the *slaughter*, in case of *pleuro-pneumonia*, is *obligatory* since September, 1878; but *certainly* it is unknown that in Belgium this measure is carried according to the diagnosis of the inspectors of the local authorities; and that amongst those inspectors, 1678 in number in 1873, 22 per cent. only are veterinarians, 59 per cent. belong to the police, and the remaining have no professional knowledge. It is *specially* to the ignorance of these inspectors that the English report of 1873 attributes the failure of the obligatory slaughtering. The disease must be well marked for these functionaries to condemn the animal. I claim that the knowledge of the experienced veterinarians are necessary to determine if an animal is *palpably affected*. I have mentioned cases where some of my colleagues, as well as myself, have made errors and taken pneumonia for pleuro-pneumonia, but I will return to this point in time.

The report of 1873 states that when pleuro-pneumonia is recognized by the inspectors in one or two animals amongst a herd of cattle, it is certain that the disease is to be recognized amongst the others only by the rising in the temperature of the body of the animal.

To find *slaughtering* efficacious, according to the report, infected animals must be separated from the moment the temperature rises to or above 103° Fahr. without any apparent cause.

But this condition of the internal temperature of the body amongst domestic animals cannot be left in the hands of a

police officer, nor to any other agent, who, like him, is entirely ignorant of any veterinary knowledge.

The English report of 1874, taking into consideration the results obtained by the chief inspector, with *isolation*, in cases of pleuro-pneumonia, sent to local English authorities a circular giving the regulations to carry on the *slaughtering* and *isolation*.

Here is a resume of this circular :

Notwithstanding Art. 3, of the circular of 1873, on animals, prescribing the obligatory slaughtering of pneumonic animals, the *privy council*, attributing in great part the continuation of the prevailing pleuro-pneumonia to the delay of the slaughtering and to the neglect of execution of Art. 19 of the law of 1871, are of opinion that the disease would be efficaciously stopped by other dispositions, if executed in the following manner :

1st. Cattle affected with pleuro-pneumonia must be killed in the shortest time possible.

2d. The internal temperature of each animal, which has been exposed to the contagion, must be observed, and the herd divided in two separated lots :

The lot A will include animals whose temperature will rise above 103° Far. These will be destroyed in the shortest time, if positive symptoms of pleuro-pneumonia become manifest.

The lot B will include the balance of the herd. Those animals will be examined with the thermometer every week, and transferred to lot A if their temperature rises above 103° Far.

At last, Mr. Fleming, in his last work on sanitary science, in the article on pleuro-pneumonia, tells us that animals, whose temperature reaches 100° but not less than 102° Far. are *suspicious*, while those giving a record of 102° to 103° are diseased.

In the presence of these affirmative data, I have decided to verify myself what degree of usefulness practically can be obtained by thermometrical observations. Those which I have made, though limited, I report. In cities, where one is not daily called upon to visit diseased cows ; rather than to call a veterinarian, they are sent to the slaughter-houses and thence to the meat market.

(To be continued)

EDITORIAL.

COMPARATIVE PATHOLOGY.

Ever since we have been engaged in the practice of our profession in America and have observed the standard and prospect of veterinary art in America, we became convinced that one of the most powerful means by which veterinary science could be raised from the low rank in which it was held, was through the medical profession, and to it we have always looked for friendly assistance and help. Personally we have had many proofs that we were right, and that every physician in good standing and of education was willing to tender the veterinarian the hand of friendship and of professional recognition.

Our impression was founded on the fact that while we were merely specialists we considered our specialty as a branch of the immense medical sciences included under the title of comparative pathology.

It is true that the progress has been slow, and probably too slow for our earnest anticipations and desire—but see, at last how right we were.

The serious appearance of pleuro-pneumonia in cattle, the wide extent of hog cholera, the prevalence of trichina in hogs, the investigations carried and new discoveries made in France on anthrax, the presence of glanders and farcy amongst many horses in our large cities, the recent publication of the transmissibility of diphtheria in fowls to other animal species; all these are facts of comparative medicine which the medical man of education cannot and does not ignore. And then we see our medical papers, the *Medical Record* of May 3d, the *Medical and Surgical Reporter* of May 17th, giving place in their columns to editorials on the subject of comparative pathology.

These we consider as good omens and signs of the future for the veterinary profession. Let our physicians become more acquainted with the diseases of animals, let them forget the horse doctor, the cow leech, the impostor horse-curer, and recognize the

veterinarian of education, and then we will see a new era take place, not only in the veterinary, but also in the medical profession.

For the realization of this idea we would suggest, besides the formation of chairs of comparative pathology in our medical schools, the opening to our medical societies of membership to worthy veterinarians. As reported in the *Medical Record*, the medical scientific bodies of Europe count amongst their members and their officers, veterinary surgeons: Bouley, Chauveau, Reynal and many others are found in the ranks of the Academy of Medicine in Paris, Thiernesse, Edlele and others belong to the Academy of Medicine of Bruxelles. Why should the Academy of Medicine of New York be less generous, and why should it not have, like its sister societies, a veterinary bureau for the essential investigation of veterinary subjects for the common benefit of a common science—comparative pathology.

While we thank our editorial brethren of New York and Philadelphia for their earnest movement in this important subject, we hope that they will not rest on their single effort, and that they will continue to keep before the medical profession at large the powerful link which unites these two branches of medical science. If human anatomy, physiology, therapeutics and surgery even owe so much to investigations on the lower animals, there is no doubt that pathology studied also in a comparative manner can be most scientifically beneficial.

PROFESSIONAL COURTESY.

It appears that in some of our numbers, articles have appeared from the pen of one of our correspondents, which seem to have carried amongst our English friends, and especially with our most eminent and friendly colleague, the editor of the *Veterinary Journal*, an idea of unprofessional language towards our transatlantic brethren. Knowing as we do the high esteem held by the author of those articles towards Mr. Fleming, we feel certain that though the style of the writing may have appeared out of place, there never was, on his part, the slightest de-

sire to overleap the boundaries of professional courtesy, and we are positive that he will be the first to acknowledge the fact and try in the future to correct the impression thus carried, and so gentlemanly complained of in the letter the editor of the *Veterinary Journal* sends to us for publication in this number of the REVIEW.

NOTICE.

We would remind our friends, whose subscriptions have expired, to notify us of their desire to renew the same, and take this occasion to assure them of our sincere thanks for the continuation of their patronage and of their friendly support towards the REVIEW.

PLEURO-PNEUMONIA.

REPORT OF THE CATTLE COMMISSIONERS OF MASSACHUSETTS RELATING TO PLEURO-PNEUMONIA IN 1863.

(See page 73.)

COMMONWEALTH OF MASSACHUSETTS.

To the Senate and House of Representatives of the Commonwealth of Massachusetts:

In accordance with the law of 1860, relating to contagious diseases among cattle, the following report is respectfully submitted :

April 20th. Charles P. Preston, of Danvers, and E. F. Thayer, of (West) Newton, were appointed to fill vacancies existing in the Board of Cattle Commissioners.

The Commissioners have been called to visit nineteen towns, and to examine the cattle of thirty different herds during the past eight months. In six only was the disease called pleuro-pneumonia found to exist, viz: in one herd in the towns respectively of Lincoln, Ashby and Boxborough, in two herds in Lexington, and in the herd belonging to the City of Boston at Deer Island.

A herd of cattle belonging to John P. Reed, of Lexington, had been isolated, by order of the selectmen, and a few days before May 1st was discharged by them from further isolation. The cattle were carefully examined, and no disease was found to exist among them.

The Commissioners were also notified that there were sick cattle at the barn of Martin Beatty in Lexington. On examination, an ox (the mate had been killed by order of the selectmen) and a cow with diseased lungs were found. Isolation of the whole herd was continued until June 16th, when, in company with the recently appointed Commissioner, F. D. Lincoln, Esq., of Brimfield, the herd was again examined. No evidence of disease was apparent, excepting in the two above mentioned, both of which were diseased to an extent that would not justify the return of the animals to the owners. Accordingly, both were slaughtered. The autopsy of the ox showed that the lower portion of the right lung adherent to the ribs, a diseased mass of lung tissue, was encysted and floating in pus. In the cow, the left lung was diseased; otherwise, the condition was similar to that of the ox.

From the history of the cases, and the pathological appearance, it was evident that the disease in both animals was of long standing, and as no other cases occurred, the remainder of the herd was released from further isolation.

On the 10th of May the Commissioners received a notice from the selectmen of Lincoln that the disease existed in the herd of George Nelson, and that the animals were kept isolated by their order.

Two cows had died, one on the 17th of March, the other on the 4th of May; several others had been sick, and were much emaciated. Generous diet was ordered and isolation continued. On the 27th, one of the cows, being greatly emaciated and evidently much diseased, was killed. A considerable mass of disease was found in the right lung; the formation of pus had commenced. The herd was kept isolated until August 3d, when three were selected as having diseased lungs, and a fourth did not thrive. It was decided to have the four slaughtered. The autopsies justified the decision in the *three*; the *fourth* was healthy.

June 3d. The Commissioners visited the farm of Levi Smith in Ashby. One of a pair of oxen purchased in Marlow, N. H., and kept in the Box Tavern stable in Stoddard, on the night of the 24th of March was found sick, the right lung being extensively diseased. The autopsy disclosed the right lung wholly consolidated, and weighing by estimate, at least twenty-five pounds.

Mr. Smith was confident that his herd would not take the disease, as the ox was removed soon after the sickness commenced.

On the 2d of July nearly every animal was sick. Two were selected for experiment; the remainder were slaughtered on the 3d of August, and all but one were diseased.

July 15th. At Boxborough the Commissioners found two cows isolated by order of the selectmen, one of which showed symptoms of lung disease; the remainder of the herd had been turned to pasture, consequently were not in fit condition for examination.

On the 29th, on examination, all were found healthy, excepting the one sick at the former visit, which had died and been buried several days. The body was exhumed, and the right lung was found to be diseased with contagious pleuro-pneumonia, so called.

Early in May, the Commissioners were requested to examine the herd of T. E. Cutter, in Lexington. Upon examination, all appeared healthy. The owner being absent at the time, no information could be elicited. In June, it

being again intimated that a disease existed among his cattle, another examination took place, by appointment, July 1st. Several chronic cases were found, and it was ordered that the herd be isolated. Mr. Cutter stated that he had already lost eleven head of cattle, the first one dying in March, and there being no ease of sickness for several weeks, it was hoped the remainder would escape; but on the 21st one of the most severe cases was found; in fact the animal could not long survive. It was then decided to have the herd slaughtered. On examination, eight were diseased and five were healthy.

The Commissioners were next called to examine a herd of cattle at Deer Island, belonging to the city of Boston. Five had been killed by the order of the directors of the institution there, before the appraisal of the herd was made. It consisted of forty-one head, many of them valuable. Eleven heavy oxen being among the number, seven were selected for experiment; thirty-four were slaughtered, seventeen proved healthy, and seventeen diseased. Thirteen hundred and thirty-eight dollars and fifty-three cents (\$1,338.53) was realized from the sale of the beef, etc., of the healthy animals, and applied in part payment of the appraised value of the cattle.

The conclusions to which the Commissioners have arrived from their investigations the past year, are that if a herd of cattle is *surely* exposed by being in contact with an animal in the early stage of the disease (as for instance, in an ordinary barn, as cattle are usually tied up), slaughtering the herd and selling the healthy for beef is the most *economical* mode of treating it; but if the exposure is doubtful, isolation, with careful watching, should be resorted to. Facts, with the figures to substantiate the above, can be produced, but it is thought unnecessary.

It is often asked, "Why kill the diseased? Why not let them recover?"

In answer, it is proper, first, to explain what recovery of the disease called pleuro pneumonia is.

To illustrate: suppose with one-half or two-thirds of one lung solidified, the first effort of nature is to throw around the diseased mass a covering of fibrinous material, entirely shutting off the healthy tissue from the diseased, which is generally accomplished in from fifteen to forty days. Suppuration then commences on the surface of the diseased mass, which continues until the whole is liquified; absorption is constantly going on, and in from six to twenty months the animal recovers, but with the loss of a portion of the *vital organ*. If the animal is a working bullock, its value is destroyed; if a cow in milk, after the acute stage is passed, the secretion is partly restored, and the milk consumed by the people.

Would an intelligent and conscientious physician recommend for a wet nurse a person with an abscess or abscesses in the lungs? If not, why is it not equally wrong to use the milk drawn from cows with lungs in the same or a similar condition?

Contagion.—In the first three herds to which the Commissioners were called, it is not probable that contact with diseased animals could be proved. Several months had elapsed since the disease broke out, and as it was in a locality where it was well known that the disease existed the year previous, it is not strange that the efforts made to trace it failed. The statements made to the Commissioners in relation to the outbreak and spread of the disease in and from Ashby are so conclusive that it seems proper to put them in this report.

The pair of oxen kept at the Box Tavern stable over night on the 24th of March, as before stated, were driven to the farm of Levi Smith, in Ashby. Eighty-six days after, one of the herd of Mr. Smith was attacked. A bull belonging to another party was kept at the farm at the time the ox was taken sick. A few days after the owner sold him, and he was driven to Sharon, N. H., where, after exposing two herds, he died, as did several animals so exposed in those herds. Much has been said about the disease being generated by bad ventilation. Unless the mountain pastures in New Hampshire, the hills of Ashby, the large, clean barns (the doors of which had not been shut for months before the disease broke out) and the hills and valleys of Deer Island require better ventilation, the theory that the disease is caused by bad ventilation must be abandoned.

The Commissioners visited New Hampshire to learn if the reports were true that the disease had broken out in the pastures of that State. On arrival at Peterborough, information was received that a board of Cattle Commissioners had been appointed by the Governor and Council, and that Albert G. Scott, Esq., a resident of that town was a member, who stated that the reports were too true, and much alarm existed among the farmers of that section. On the following day, by invitation of the New Hampshire Commissioners, several herds were examined in Hancock and Peterborough. Two animals were selected and slaughtered. The autopsies proved that it was the same disease as in Massachusetts. An arrangement was made with the New Hampshire Commissioners that no cattle affected with pleuro-pneumonia should be allowed to go to Massachusetts, or that cattle which had been exposed in pastures where the disease had existed, or in adjoining pastures, should not be transported otherwise than by railroad, and on arrival in this State to be sold for beef, thereby protecting the farmers on the line of road usually traveled in both States, and preventing the spread of the disease in the localities where the cattle were owned.

Much credit is due the New Hampshire Commissioners for their energetic and faithful co-operation in the endeavor to prevent the spread of the disease in their own State, and in enforcing such rules as would tend to keep it from endangering the herds of neighboring States.

Indeed, it appeared to the Commissioners that far less apathy in relation to a matter so serious and vital prevailed in New Hampshire than in many portions of our own State. It is easy for newspaper writers to hold up any subject to ridicule, and for careless and unobservant persons to sneer at what they do not understand; but it remains, nevertheless, true that no one has seriously and candidly examined into the character of this disease, no matter what their preconceived notions and opinions, who have not been forced to confess that no measures for its eradication or its prevention should be left untried, or any care or attention intermitted that may possibly arrest this scourge to farmers, and this fountain of disease to our people.

By order of the honorable Council, the Commissioners were "requested to cause such cattle as may be infected, or which have been exposed to infection, with pleuro-pneumonia, to be isolated to determine the question of the contagiousness and curability of the disease; also, whether for the purpose of working, milking or breeding they have been injured, and to what extent they have been injured by exposure to disease, or by having had the disease; and also to ascertain, by slaughtering them at a sufficiently remote period, whether, and to what extent, their fattening qualities have been injured."

As the experiments instituted are not concluded, the result will appear in a future report.

The amount of bills audited, exclusive of the various sums to which the several towns are liable, is thirty-eight hundred and seventy-five dollars and ten cents (\$3,875.10), and by estimate, it will require twenty-five hundred dollars to pay the outstanding bills, making the total sum expended nearly six thousand four hundred dollars, (\$6,400).

Respectfully submitted.

E. F. THAYER,
CHAS. P. PRESTON,
Commissioners.

MINORITY REPORT.

To the Senate and House of Representatives :—

GENTLEMEN,—Having received the appointment as Commissioner on Contagious Diseases of Cattle, and not being able to subscribe to the Report which the Board of Commissioners have seen fit to present, I beg leave to submit the following as a minority report:—

All must admit the importance of arriving at a correct conclusion in relation to the disease existing among the cattle of the New England States, known as pleuro-pneumonia. For if what is so generally said by those who have had the better opportunity to examine the subject be true, viz., that the future value of the neat stock in this country depends upon the vigilance used to check the spread of the disease by the destruction of the cattle having the disease, or having been exposed to the same, it is certainly difficult to calculate the importance of vigilant action in this direction. If, on the other hand, it be true that all that is necessary is to use the care and precaution used in the treatment of other diseases, then the course which has been thus far pursued by this Commonwealth can be viewed in no other light than that of an unwarrantable waste of property, which, if followed, may involve the loss of many millions of dollars.

I suppose it not far from a just estimate to put the amount expended by the State, and the loss suffered by individuals to the present time at two hundred thousand dollars, (\$200,000;) and when or where this expenditure is to cease, no prudent man will venture an opinion. Two years ago the Commissioners announced that they were happy to be able to say that no case then existed in the State that they were aware of, and the public were led to believe that they were finally relieved of the terrible scourge; and yet there have been since that time more than a hundred cases! Had the present Board been called upon to make their Report two months since, I doubt not they would have been happy in trying to quiet the fears of any of the timid. All at once there breaks out on Deer Island, in one of the better herds, if not the best one in the State, as bad a case as has come under their observation during the season.

Believing that a just conclusion as to the proper course to be pursued can only be arrived at by a careful consideration of the facts bearing on the following questions, viz: Is the disease contagious? if so, to what extent? Is it curable? To what extent is it fatal? Are the animals affected with the disease worth keeping through a common course of it, either for fattening, milking, breeding, or working purposes? I present the following as all the facts I have been able to obtain!

The first case I was called upon to visit was that of a herd belonging to Martin Beatty, of Lexington, containing thirteen or fourteen head, made up of cows and young cattle. This herd had been isolated some time previous by the order of the selectmen. The Commissioners had continued the isolation, and had, previous to my meeting with them, agreed to kill one cow belonging to Mr. Beatty, and an ox which had been kept for some time in the barn with the diseased cow, owned by Carroll and Nevils. Both of these animals had been in low condition, but for two weeks or more had gained in flesh rapidly. An examination proved that each had what is called contagious pleuro-pneumonia. That they would have fattened readily was believed on all hands, and their improvement for the two weeks previous to their being killed seemed to warrant that conclusion. Where either of these got the disease, we could not learn. The cow was kept with the rest of the herd, (thirteen, I think, in number,) till some days after she showed that she had the disease, probably till after the time it is generally supposed those affected with contagious pleuro-pneumonia will communicate it to others, and yet no one of the herd with which she was kept had the disease that we are aware of; and perhaps it is proper to state that we kept the remainder of the herd isolated for some time, and Dr. Thayer made a number of examinations before we thought it prudent to take off the restriction.

The herd of Levi Smith of Ashby was the next I visited, from which any facts were elicited than bear upon the questions under consideration. Smith had a herd consisting of eight cows, two bulls, and a calf. There had been kept a pair of oxen belonging to one Willard with this stock, which oxen were purchased in Marlow, N. H., and were kept one night at the Box Tavern with some other cattle which were supposed to have pleuro-pneumonia. I say supposed because no evidence came before us that any one who had any knowledge of the disease had ever examined them, and had it not been for the breaking out of the disease in Smith's herd probably none would have suspected the cattle at the Box Tavern. Some forty days after the above supposed exposure, one of these oxen was taken sick. Dr. Thayer and Mr. Preston had the yoke appraised, killed the sick one and found that he had pleuro-pneumonia. The other ox was taken to Brighton, where he afterwards died, but an examination showed to Dr. Thayer's satisfaction, that he had never had the above-named disease. Some two weeks after the ox was killed, the Commissioners were called to Mr. Smith's again and found one of the cows quite sick. We had the whole herd appraised, killed the sick cow, (she had pleuro-pneumonia,) ordered Mr. Smith to isolate his herd by building a double fence on the side of his pasture where other herds were kept. One of Smith's bulls had been with the cows of Mr. Asa Walker till it showed symptoms of the disease, coughing and the like, and the Board directed these cows to be kept isolated. On the fourth of July two of Smith's cows were brought to Newtonville to be placed with four cows brought from Maine to try the effects of an exposure; both these cows were killed on the thirteenth of July and found to have had pleuro-pneumonia. Of the experiment I shall speak hereafter. The remainder of Smith's herd was killed in August; all except one cow and the calf were diseased. What this herd would have been worth to have kept it of course would be presumptuous to say, for there was no pains taken with the milking; the calf which was nearly three months old went with, and of course drew his milk from, as many of them and at such times as inclination led him thereto. Smith considered

the milk of no value except to feed the swine upon, and the cows were from all these reasons used in such a manner as would have ruined any cows for the season. It should be noted that the calf both before and after being killed had the appearance of having been perfectly healthy; also that the neighbor's cows that were exposed to Smith's bull, six and probably nine in number, have never shown any signs of the disease; and further, that a bull that was kept at Smith's place for some time after the ox was taken sick, is said to have died in about ten days after being taken away, having given the disease to each of the herds with which he came in contact in Sharon, N. H. What reliance is to be placed on this story is for others to decide; I record it as it was told. Smith says in relation to this bull that he never came in contact with the sick ox, nor with any other of the sick cattle of his herd. It is conceded that no one of the above-named herd would have died of the disease except the ox first taken and the cow that was killed on the 23d of June, nor was it thought by Dr. Thayer that *she* would have died but for the presence of a quantity of masticated grass found in the bronchial tubes.

This is the only case to which we have been called where we were able to trace even a probable connection between the disease found, and any other herd. It is for others to judge how conclusive the evidence in this case is.

George Nelson, of Lincoln, had a herd of about twelve head, which were isolated by the selectmen, and turned over by them to the care of the Commissioners. Two of the cows had died, and one was sick at the time Dr. Thayer and Mr. Preston first visited the place. By their order the herd was appraised, and kept isolated; the sick cow was killed, and found to have had the pleuropneumonia. Dr. Thayer visited the herd several times, and examined it carefully. On the 29th of June the Board, by his advice, returned to Mr. Nelson all his herd but three cows; but on a subsequent visit it was decided to take one other cow with these three, and have them slaughtered in Brighton. Three of these cows showed the effects of diseased lungs, the other was perfectly sound; in one, the lung on one side was nearly wasted, there being not more than one-third of its proper size left, and that a hard lump adhering firmly to the ribs. I do not hesitate to say that had either of these animals belonged to me, and had been fat, I should have used the meat for food, without apprehending any injurious effects therefrom. So I think most of the farmers of this Commonwealth would have done. That they would have fattened readily, all the testimony that has come before us goes to prove; indeed, much of it is to the effect that cattle after passing the acute stage of the disease, fatten more readily for having had it.

I deem it proper to take more particular notice of Nelson's herd, because I have so often heard it mentioned as furnishing evidence sufficient to prove that cows affected with pleuro-pneumonia are not worth keeping for milking purposes. The facts in the case are simply these: From the time the Commissioners took possession of Nelson's cows till they were returned to him, and the four cows killed, he took care of them for the State, charging for his trouble and whatever it cost to feed them, on grass, hay, and meal, giving the State credit for what so much of the milk as was deemed fit to sell brought; and the result was that the cost of keeping was much more than was realized from the sale of the milk. Now, without going into an argument as to whether herds of cows would generally if kept in this manner, pay for their keeping, leaving out of the

account the value of the manure, it is sufficient in this case to state the facts that Nelson said, repeatedly, that the cows, for some reason, gave but little milk; that he could see no difference in them in this respect. Dr. Thayer examined them again and again, and could detect no trace of the disease in but four, and in one of these he detected it where it did not exist. To state the case in a different form: three of the nine cows, (I think there were nine left after killing the first one,) had pleuro-pneumonia. None of them paid for their keeping; *ergo*, cows that have the pleuro-pneumonia are not worth keeping! So easily do men become the dupes of their own prejudices! To such ridiculous shifts as these are men driven who have a theory to maintain which they deem of vital importance! It may be said that perhaps the remainder of the herd had the disease; but one of them, at least, did not have it, and the evidence is, that no difference existed among the herd as to the falling off in the milk.

Not a little excitement existed in Lexington in regard to a herd belonging to T. E. Cutter, from which several cows had died during the spring and summer. The Commissioners had the herd isolated, and at a subsequent visit one of the cows was found to be very sick. It was thought best to have the whole herd, consisting of thirteen cows and a bull, appraised and killed at Brighton, where the meat of the healthy portion could be readily disposed of. All but four of the number proved to have had the disease. The only facts I deem it worth recording here in relation to Cutter's herd are, that Cutter declared that neither of the cattle killed at Brighton had ever shown to him any symptoms of the disease, though he had watched them closely, and had had that experience which having the disease in his herd six or eight months would give; and that he did not mention as a fact that the cows did not pay for their keeping, but on the contrary, complained of the loss he should suffer by being deprived of the milk of so good a herd. Let it be borne in mind, that eight of this herd had had the pleuro-pneumonia for months.

July 15th we visited the herd of Oliver Meade, of Boxborough, consisting of two cows and some dozen young cattle. Meade had lost two cows, and the selectmen had compelled him to shut up in his barn the remaining two. On inquiry it was found that one of these cows and a two-year old had been purchased of his brother, who lived about a mile distant, which brother sometimes traded with Lexington people, and during the past season had lost an animal of some disease. These were deemed suspicious facts, and the cow bought of the brother, though appearing to the inexperienced to be perfectly healthy, and the one by her side which was evidently diseased, were condemned. The young cattle were taken from the pasture and kept in a stable for two weeks, that Dr. Thayer might have a good opportunity to examine them; and that other herds might not be exposed previous to such an examination. On our visiting the place, two weeks afterward, one of the cows was dead. The young cattle were examined thoroughly, particularly the one bought of the brother, and also the remaining cow. The doctor thought she must have the disease in the chronic stage, being positive that she had a slight adhesion on one side, and there seemed to be no other way to trace the disease, as none of the young cattle had ever shown any symptoms of the disorder, and they had been kept all winter in the barn, with the one bought of the brother. The three cows which Meade had owned for years, were dead. The lungs of one of them Dr. Thayer had examined, and there could be no mistake about its having had the contagious pleuro-pneumonia.

The remaining cow must, as he thought, be the dragon that brought the trouble into the family; and though she stood a perfect picture of innocence and health, was condemned. But, alas for science! her lungs proved to be as clean as her countenance, and we poor mortals were again afloat as to the evidence. To make the matter still worse, it was found on hearing all the testimony in regard to the brother's animal, that something else than pleuro-pneumonia must have been the trouble with it. To relieve us from the terrible dilemma, the veterinary surgeon of Boxborough suggested that Mr. Meade lived on a road over which cattle were sometimes driven on their way to and from New Hampshire, and what more probable than that some of them might have had the disease, and stopped long enough at Meade's barnyard to have left it! The *great mystery* was solved, and we left! Let it be borne in mind that there was no evidence that the disease called pleuro-pneumonia had ever existed in any other herd than Meade's, kept in the neighborhood of Boxborough; that Meade's cows, beyond a question, had the contagious form of the disease; that he, or his neighbors, raised his whole herd, except the two animals before mentioned, and *they* were free from the disease; and it will be seen at once that it was necessary to adopt the theory of the old negro, the veterinary surgeon referred to, or some similar one, or the doctrine of the exclusive contagiousness of the disease must be abandoned.

On the tenth of November, just as we were settling into the belief that we had effectually checked the spread of the disease, not having had a fresh case for three months, Dr. Thayer decided that the herd belonging to the city of Boston kept on Deer Island, was seriously affected with pleuro-pneumonia. The Board was called to confer with the Directors of the House of Industry in relation to the matter. After a consultation in which it was suggested by some of the Directors, and, as I thought, generally assented to by their Board, that Deer Island was just the place to try experiments as to the disease, it was agreed on our part with Mr. Payson, with whom the city authorities had left the whole matter, so far as they were concerned, that on the Tuesday following (this was on Saturday,) the Commissioners would go to Deer Island, have the herd appraised, Dr. Thayer would examine it carefully, and the State should take that part of it in which he should find any evidence of the disease existing, and the city should hold the remainder.

Mr. Payson was to keep the whole stock without food from Monday night till we should arrive on Tuesday, that the doctor might have the better opportunity to detect any trace of disease. From some cause, never satisfactorily explained, I found on arriving on Deer Island on the day agreed upon, that the programme had been entirely changed, and the Commissioners had agreed, without consulting me in relation to the matter, to take the whole herd, and have it slaughtered, unless Mr. Payson should see fit to select some of it to keep, it being understood that should such part of the stock as he might select thereafter have the pleuro-pneumonia, the State should pay the city the amount at which they were appraised. Against this arrangement I felt it my duty to protest, because I deemed it a matter of great importance to the Commonwealth that the question should be fairly tested, whether cattle affected with this disease are worth keeping. We had been requested by the Governor and Council to test, as best we could, this and other points. Up to this time we had labored under difficulties which here would be entirely overcome;—such as finding suitable

persons to take care of, and places to keep such cattle in, without exposure to others. Here was a herd of valuable cattle, cows valued by Mr. Payson at from eighty to one hundred and fifty dollars. Certainly if any animals were worth keeping through a siege of the disease these were. Perhaps on no other farm in this State is there that precise care taken of stock, so as to be able to tell the profit or loss attending it; no one could here complain of the danger of exposure to other herds, this being the only one on the island. In short, if there be a place in this Commonwealth where such an experiment can be carried on successfully, it would seem that Deer Island is that place; or if there be any cattle worth thus experimenting with, such stock as they had there is that stock. It had been found that in many cases where cattle were killed, the effects of the disease were so slight that no one would pronounce the beef unhealthy for food. Mr. Payson had killed an ox of this herd that Dr. Thayer, as a physician, had advised him to use. I proposed that if this herd must all be slaughtered, the stock appearing to be healthy be held by Mr. Payson, so that should there be any such cases as referred to, the State might not lose their whole appraisal; the Commissioners having previously decided that the law did not allow them to dispose of the beef when the slightest trace of the disease was found. But this proposition was rejected. In a single day's slaughtering were found two oxen appraised at two hundred and forty-seven dollars and fifty cents, (\$247.50,) and would have brought more than two hundred dollars in market; which both my associates decided they should not hesitate to eat or give to their families, but which we could not sell. The herd was slaughtered, with the exception of four cows, two yearlings and a calf; and these were saved, not, as the report of the Commissioners might lead one to conclude, for *them* to try an experiment with, but because Mr. Payson would rather run the risk of their having the disease than to suffer the loss he would, if he accepted the appraisal. Fourteen of the thirty-five slaughtered by the Commissioners were more or less diseased; two of them would probably have died.

Up to this time not the slightest evidence has been found that the disease was brought to the island from other herds; and yet several of the daily papers of Boston published articles calculated, if not intended, to lead the public to believe that the disease had been traced to a yoke of oxen bought of a man in New Hampshire, who, four years ago, sent the disease to Quincy. It is true that the lungs appearing to have been longest affected were taken from a yoke of oxen Mr. Payson bought last May of a man bearing the same family name of him who it is said sold the cattle which caused the trouble at Quincy in 1861. But it is also true that the oxen bought by Mr. Payson had stood in the same stable, eaten at the same rack, drank at the same trough, worked in the same field, and been with through the entire summer, three or four other yoke of oxen, all of which were killed, and no trace of the disease found. It is also true that they had never been with any other cattle of the diseased herd, were kept in a barn separated from them by a distance of several rods, and the only possible exposure there could have been for them was in that all drank at the same trough, but never at the same time. It is also true that Mr. Payson had worked these oxen through the entire season without having had the least idea of their having been diseased. He says that some time during the summer *one* of the oxen did not thrive as well as he thought he ought to have done, and he ordered a little more grain to be put into his food. These facts are worth noticing, as

tending to show the value of such cattle for work. Still, again, it is true that the butcher employed on this farm says that he killed an animal from this herd more than a year ago whose lungs were affected in precisely the same way that those were which the Commissioners decided had the pleuro-pneumonia. But his story was not believed. Ah no! for it ran counter to the popular theory in regard to the disease. The tale of any old gossip, nay, even the "heard tell" which dame Rumor so generally employs, is sufficient to prove that the cattle at the Box Tavern were the means of giving the disease to Smith's herd. But here, a man who says he examined the lung carefully, and certainly had perception enough, if ever he had seen *one* good case of pleuro-pneumonia, to know another case, is doubted. The old lady could not be made to believe her son's story of the wonders of the sea, though told with moderation; but when he told her of the great gold chariot-wheel which they fished out of the Red Sea, stamped with Pharaoh's name, she could believe, because she had read in the Scripture about its being lost there. There is still another fact in relation to the Deer Island stock worthy of notice, viz: seven of the ten cows killed by the Commissioners, and found diseased, had passed from the acute to the chronic stage of the disease without Mr. Payson's notice, either by the falling off in their milk, or in any other way; a fact which carries additional weight when we remember that Mr. Payson is not one of those "guess so" farmers, but one who takes just pride in pointing out each cow in his herd, and referring to his memoranda, states the exact amount of milk she gave in any given month, and the butter made therefrom. One may well ask how can it be that cows affected with pleuro-pneumonia are worthless for milk, when such a man had it in his herd for months, and never dreamed but that he had a healthy herd?

My associates, in their report, mention the fact that an experiment is in progress to test certain points in reference to the effect of pleuro-pneumonia in cows, and without giving any particulars in relation to the progress of the experiment, intimated that at some future day all the facts shall be made known. It seems to me proper that the facts thus far developed should be reported, and I shall therefore venture to give such as have come to my knowledge.

About the first of July two cows were brought from Smith's herd, in Ashby, to Newtonville, and placed in a barn which had been previously selected as a suitable place to try the experiment. To all appearances this barn is in a healthy locality, and unless the confinement to which the cows were subjected be objected to, I cannot see why it was not a good place for the trial. On the eighth of the same month four cows were brought from Maine, and immediately after their arrival, while in that state of exhaustion which the journey would produce, one of them was tied in a stall between the two sick cows for twenty-four hours. Each of the Maine cows were similarly exposed. The two cows brought from Ashby were then killed, and found to have been diseased with contagious pleuro-pneumonia. The lungs of one were but slightly affected, but the other had a large portion of one lung diseased. No other animal of Smith's herd, except one cow, was as badly affected, the lung on one side weighing twelve pounds, on the other a little over two pounds. In about forty days Dr. Thayer decided that one of the exposed cows had the disease, and expressed an opinion that two others would have it. Two other veterinary surgeons were quite confident that three of the four cows had an adhesion, but Dr. Thayer has

never given it as his opinion that more than one has had pleuro-pneumonia.

Owing partly to an indisposition on the part of a majority of the Commissioners, and partly to a difficulty to find a suitable place, no more cows were exposed till the fourteenth. After the cow at Newtonville was taken sick, she was carried to Weston and exposed for several days to two cows brought from Upton, and after the exposure taken back to Newtonville. Neither of the Upton cows had shown any symptoms of the malady up to the time the disease was discovered on Deer Island, (nearly three months) and it was thought best to expose them to an animal from that herd. Accordingly, Dr. Thayer selected an animal which he pronounced perfect for the purpose, had it carried to Newton and exposed the cows there to his satisfaction, when the animal was killed and found to have had the disease in its worst form. It is supposed that there has not been sufficient time since the last exposure to indicate the effect.*

To sum up the result, we have exposed in the manner I have stated six cows; only one has had the disease. Three of them have had the double exposure of having two cows affected with the disease tied on either side of them for twenty-four hours, in such a manner as to make it certain that they should inhale the breath of the sick ones, eat the food that the sick one had breathed upon, and also of being kept in the stable with one diseased cow through the whole course of her sickness, with the exception of two or three days. In about twenty days from the time the cow brought from Maine was taken sick, Dr. Thayer told me she gave about the same quantity of milk that she did before her sickness, which certainly was a little singular, as every farmer knows that if, from any cause, a cow falls off in her milk for any considerable number of days it is not often she comes up to the same mark without a change in the feed, and there was no change in this case.

Such are all the facts bearing upon the points named in the first part of this report which I have been able to gather. Meagre, I know them to be; so meagre that he must be a rash man who would attempt to build any theory thereon. It would seem to me that they rather tend to a disbelief in the present popular theory in regard to the disease than to furnish the material to build a new one. But I do not feel that I am wholly at fault that they are comparatively so unimportant; more than once have I proposed that we call to our aid some man of acknowledged medical skill and scientific ability. But all such propositions have ever met with disapproval. It certainly is consistent in him who has no faith in medicine to refuse to call a physician, and equally so in him who believes he knows as much as any one, to ask advice of others.

I do not hesitate to say then that the experiment at Newtonville has proved of comparatively little value. My associates have no faith in the use of medicine for the disease, and still more, they think that he who is not already satisfied that the only proper treatment of a herd affected is to have it immediately slaughtered, is not worthy of the pains it would require to convince him. Men having such views cannot be expected to carry on an experiment with that interest necessary to elicit the truth; nor can it be expected that farmers who

* Since writing the foregoing, I learn from Dr. Thayer that the "Upton cows" were exposed to the animal from Deer Island for two weeks, it having been tied between them during the whole of that time. Sixty days have passed since, and neither of the cows has shown any evidence of having had the disease, unless a slight cough in one of them may be considered such. Forty-five days is the extent of time fixed upon as the time of incubation.

have their herds appraised at what three disinterested men swear is a fair market value will make much effort to prove they are worth keeping, when they know that a majority of those who are to judge between them and the State consider it worse than useless.

It is asserted, and I suppose generally believed, that the disease⁹ has no parallel in the human or brute creation. I have said that the proposition to take counsel of experienced medical men had met with no favor with the Board. The only testimony I have therefore on this point is the opinion of one who has had no little experience, and in whose judgment I have that confidence which leads me to trust my own and the life of my family to his skill, who gave it as his opinion on an examination of one of the more thoroughly diseased lungs we have taken from any animal, that there was nothing about it that he should not expect to find in an acute case of the lung fever. Let no one suppose that I offer this opinion thinking it of much value; for I do not even consider, what is so often and triumphantly referred to, the opinions of Tom, Dick and Harry across the water, worth considering for one moment, when we can for a tithe of the money which has been expended by the Commissioners in a single year, by properly conducted experiments, place all the questions of interest in relation to this disease, and its effects, forever beyond the need of an opinion. It is not many years since the whole medical faculty of the old world stood aghast at the virulence of a disease which to-day is but little feared by skilful medical men, either there or here. Nor is it long since he would have been set down as a simpleton who would venture the opinion that any one of many of the diseases not now classed among contagious disorders was other than purely so. If it be proved that pleuro-pneumonia never appeared in this country until Chenery brought it from abroad, it does not follow that it is not *now* an epidemic. Nor does it follow, by any means, that because the veterinary surgeons of this country have found no remedy for the disease, therefore it cannot be cured, and that, too, so readily as to make it the part of folly to slaughter every herd in which it appears. Certain it is to my mind that not twenty, nay, not even a hundred thousand dollars will drive the disease from this State if expended in the manner it has heretofore been.

Many times have I been warned against doing anything which might jeopardize the farming interest of this State, or the health of the people. I am a farmer, and what is more, one who believes that whatever affects their welfare is of vital importance to the Commonwealth; nor would I say one word which I believe could possibly endanger the health of one of the humblest of our citizens. But I can but think it necessary that the whole truth in regard to this disease be brought to light. I do not deem it proper to enter into an argument as to the best course to be followed in relation to the disorder, but simply to give you the facts as they have come before me, trusting that the Legislature would search out any defects that may exist in the present statutes bearing upon this case, and apply the remedy. Let me suggest that if the present system of slaughter is to be continued, that the law be so amended as to enable the Commissioners to sell for meat such beef as they may deem perfectly healthy for food.

I annex hereunto a copy of each of the orders passed by the Governor's Council, intended as it would seem to be a guide in some degree for our action. There can be no possible doubt but that the course therein indicated could be

carried out with perfect safety to the community. Nor can I for a moment question whether a series of experiments, if made by men competent to make the same, would ultimately be the means of saving a vast amount of property to the Commonwealth. Certain is it that the public would then have the satisfaction of *knowing* what had better be done, instead of groping where, at best, all is mere conjecture.

F. D. LINCOLN.

Brimfield, January 7, 1865.

COMMONWEALTH OF MASSACHUSETTS.

COUNCIL CHAMBER,
Boston, April 20, 1864. }

Ordered, That the Cattle Commissioners, appointed under Chapter 28, Acts of 1862, be requested to cause such cattle as may be infected, or which have been exposed to infection with pleuro-pneumonia, to be isolated in accordance with the provisions of the Acts of 1860, Chapters 220, 221, in order that satisfactory experiments may be tried to determine the question of the contagiousness and curability of the disease called pleuro-pneumonia.

Order adopted April 21, 1864.

OLIVER WARNER, Secretary.

SECRETARY'S DEPARTMENT, December 17, 1864.

A true copy. Attest.

OLIVER WARNER,
Secretary of the Commonwealth.

COMMONWEALTH OF MASSACHUSETTS.

EXECUTIVE DEPARTMENT,
Boston, December 22, 1864. }

Ordered, That the Commissioners on Contagious Diseases of Cattle be directed to place the cattle which have been exposed to diseased cattle, under the order of Council of April 20th, referred to in a communication from said Commissioners of 9th instant, or which may be hereafter so exposed, under the same treatment as farmers' cattle ordinarily receive on a well-conducted farm in Massachusetts, in order that it may be ascertained whether, for purposes of working, milking or breeding, they have been injured, and to what extent they have been injured by exposure to the disease, etc., or by having had the disease; and also to ascertain, by slaughtering them at a sufficiently remote period, whether, and to what extent, their fattening qualities have been injured.

December 22, 1864, order adopted.

OLIVER WARNER, Secretary.

A true copy. Attest.

OLIVER WARNER,
Secretary of the Commonwealth.

REPORTS OF CASES.

DISEASES EXISTING IN HORSES, WITHOUT MANIFEST SYMPTOMS.

By R. WOOD, V.S., LOWELL, MASS.

(Continued from page 429, Vol. 2.)

Case 4.—Gray mare, ten years of age, used in a provision wagon ; had been used by the same parties about four years, and always considered healthy. On this day she was used in carryall to church ; on returning at noon she was allowed to roll on the grass near the stable, but after rolling, was unable to rise, became delirious, and died about three o'clock, P.M. The autopsy revealed several ulcerative spots, half an inch in diameter, at the base of cerebellum, also clots of blood. The immediate cause of death was apoplexy.

Upon inquiry, I learned that this mare, for months previous, had often, while waiting in front of the store, apparently gone to sleep resting the weight of her head on the bridle, the owner attributing the apparent sleep to weariness, she being in every other way in perfect health, and able to work hard. The brain was shown to our eminent surgeon, Dr. Gilman Kimball, who remarked, that had he not seen the specimen, he could not have believed that such an amount of disease could have existed and the animal be able to labor daily, without exhibiting symptoms which were positive of diseased condition of the brain.

CASES OF RUPTURED LIVER.

Case 5.—Large bay team horse, 12 years of age, was employed at this time to draw logs out of the canal ; during the afternoon had accidentally slipped and fallen on one of the logs ; on rising, he, for a few moments, seemed hurt, but continued to work an hour or two more. On reaching the stable, manifested symptoms of pain. My attention being called, my brother, then

on a visit to me, accompanied me. We found our patient uneasy, moving back and forth in his stall, would lie down, but could not lie but a few moments at a time, pulse depressed and slow, respiration somewhat quick, and occasionally sighing, visible membranes pale. Diagnosis, internal hemorrhage, ruptured liver probable. The horse died during the night. Autopsy, on the following morning, proved diagnosis correct. The largest lobe of the liver ruptured, without rupture of its capsule, which accounts for the animal living so many hours after the injury, yet the liver was unusually large, and much disintegrated, and had evidently been diseased for some time.

Case 6.—A beautiful bay horse, ten years old, used in a provision wagon; had been to our city "poor farm," to deliver goods, and on returning from the street to the highway, just as he reached the corner, in a playful manner, started quickly, and after going a few rods, fell into the road and was dead in a few moments. An autopsy revealed rupture of the liver and its capsule to great extent, the liver of a pale ash color, softened and easily broken between the fingers. The owners had refused an offer of three hundred dollars for him only a few months before, believing him to be perfect in health in all respects.

Case 7.—Bay mare, aged—; had been used in a livery stable for six or seven years, and had always been to all appearances healthy, and a great worker. On returning to the stable one evening, she was observed to appear very tired, hanging her head low and refusing to eat. A remedy, much more popular at that time (20 years ago) than now, of gin and molasses was given. Appearing on the next morning about the same, my attention was called to her. I found her much depressed, weak, pulse hardly detectible, respiration slow, extremities cold, and visible membranes extremely pale and bloodless, so much so I diagnosed the case as one of internal hemorrhage, ruptured liver probably. The mare lived about forty-eight hours, and fell dead. Autopsy revealed rupture of the liver, without the capsule, but this was distended to its utmost capacity. As in the former case, the hemorrhage was slower in consequence of the capsule remaining intact.

CORRESPONDENCE.

To the Editor of the American Veterinary Review :

Dear Mr. Editor and esteemed colleague.—At not very infrequent intervals, there have appeared articles in your interesting periodical, in which, in one part or another, indulgence in strong language and undeserved disparagement, either towards myself personally, or the Journal which I edit, is manifested. I have hesitated to notice these attacks hitherto, trusting to the sense of fairness which I know your readers to possess, and also hoping that your editorial influence would be invoked in my behalf, or, at least in that of your contemporary, the *Veterinary Journal*. But as these vituperations and unfounded assertions are continued, and appear to have become a permanent feature in certain communications, I think it is high time to notice them, and to ask for your exercise of the editorial privilege. In the *Review* for April, just at hand, there is a paper, at page 12, with a heading in German, and which is a kind of translation from that language; and one of the early sentences, serving to introduce the subject, contains the statement that “about all the matter of any scientific value in the *Veterinary Journal*, Britain’s leading review, is purloined from continental workers.” Now, whatever meaning the word *purloin* may bear in Germany or the United States of America, we, in this country, understand it to signify *theft* or *dishonesty*. If such be the meaning the writer of the articles in question intended to convey, I have no course open but to repudiate, in the most forcible terms I can find, such an unwarranted charge. I indignantly deny that any article which has appeared in the *Veterinary Journal* has, to my knowledge, been *purloined*. It is true that translations of papers which have been published in foreign periodicals sometimes appear in that journal, and I trust in comprehensible and undefiled English. But I am not aware that they are claimed as original communications, or that any attempt is made to *steal* the credit of them from their authors. The *Veterinary Journal* may not contain as extremely scientific and

abstruse papers as some of the German journals—that is its misfortune, not its fault; but I feel that I may claim for it honesty and good intentions, and a desire to promote veterinary knowledge. It has no need to purloin, neither has it the intention to act dishonestly. We, in this miserable, unenlightened country of ours, do not pretend to be what we are not, nor do we venture to compare ourselves in some things with the Berlin professors, though we think ourselves quite equal in other respects, and these the most valuable, after all. But we are sufficiently honest and patriotic to confess our shortcomings, and at the same time to deny ourselves the questionable gratification of running ourselves down—as a nation—in order that we may unduly laud aliens, simply because we, personally, have chosen to be educated by them. There are good and scientific, as well as honest veterinarians in other countries than Germany; and there is no need to be unjust or to say untruthful things, in order that German teachers, and an individual who has borrowed some of their scientific notions, may thereby be glorified. It is, to say the least of it, bad taste which, it is to be hoped, time and fuller experience will remedy. In the meantime I will look to you, sir, in exercising your editorial functions, to correct expressions which you will now know to be offensive, as well as unwarrantable, until the remedy arrives.

Believe me to be, Sir, yours most sincerely,

The Editor of the *Veterinary Journal*.

London, April 30, 1879.

249 WASHINGTON ST., }
JERSEY CITY, May 10th, 1879. }

Editor's American Veterinary Review:

GENTS.—Perhaps the following may be of some interest to your readers. I saw this day, in company with Dr. Miller, a cow belonging to Mr. Michael Torpey of Hoboken, height fifteen hands, weight about fifteen hundred, five years old. She was a twin calf from an imported Alderney bull and a full blood

Ayrshire cow. Her sister, larger than herself, was killed. She has borne nine calves, twins four times, and gives about 25 quarts of milk per diem.

Yours,

T. B. ROGERS, D.V.S.

ADDRESS

BY CHARLES B. MICHENER, D.V.S.,

Before the Second Regular Annual Meeting of the American Veterinary College Alumni Association.

GENTLEMEN:—To have been chosen to present the *very first* paper before this body, is a privilege which I fully appreciate, but had this choice fallen upon some one of our members more competent than myself to fulfill the appointment, it would have been more in keeping with the importance of the occasion. The choice may, after all, prove a happy one, as it will be a source of just pride for an alumnus of this institution in a quarter of a century from now to look back and notice the disparity existing between this and an alumnus' essay of that period.

I trust that you will excuse me for not taking up some abstract veterinary study as the subject of this paper, and bear with me while I notice, very briefly, the objects of this Association. We meet here, not socially alone, but for mutual improvement and the advancement of the science of veterinary medicine, and these questions are very apropos: 1st. Who are we? and 2d. How come we to exist as a body? I think that I can say without egotism that we are the first intelligent Veterinary Alumni Association of the United States. We owe our existence to the American Veterinary College; and springing from that institution it may be well to inquire into the reasons which gave it birth.

Not very far back in the history of this country, a demand

was recognized which at that time was not supplied. This demand became imperative, and as a result, the New York College of Veterinary Surgeons was founded, a charter secured, and regular sessions for the teaching of veterinary science were instituted and conducted. You all know the history of that institution from its birth to the present. You have all seen and appreciated the causes which operated to make the incorporation of the American Veterinary College in 1875 a *necessity*.

The restraints which were endeavored to be put upon the faculty while they constituted the N. Y. C. of V. S., have reacted entirely to the benefit of the student, and have given to us an alma matar of which we are *justly* proud. Our professors in the different departments are men who do not allow self and pecuniariness to deter them from doing all in their power to make the American Veterinary College the peer of any college in the old world.

There is one man (and I speak of him, not out of any disregard to the other members of the faculty) whose untiring zeal, perseverance, industry and self-sacrifice commends to every student of veterinary medicine a lasting appreciation and hearty cooperation. I need not mention the name of this *teacher*, this *gentleman*, this *friend*. You, who, like myself, have come to know him, know how great he is in his devotion to veterinary science. Starting then as the graduates of an honorable and well appointed veterinary college, it behooves us to use every endeavor that by assiduous study and careful investigations we may secure for ourselves and our profession, a scientific standing worthy the full recognition which a calling so preeminently important and humane deserves. The future is freighted with victories, and replete with facts for those of us who go forth to work. To *progress* is a law of nature, and for any to still stand, (which is synonymous with retrogression) is fatal to us as individuals, and derogatory to the veterinary profession. There are certain relations existing among members of this Association which should ever be held sacred. We owe it to the profession that our positions in life, our investigations, our opinions should *only* be actuated and obtained by motives which strive after TRUTH. Petty rivalry,

personal aggrandizement must give way to those feelings which make every new fact, every advancement, the common property of the profession, upon which altar shall be laid for future, as well as the present generations, the first fruits of our lives.

To conclude, gentlemen, as a body, and as individuals, let us ever refuse to bury our honor, our integrity, our manhood by descending to the level of those who have earned the opprobrium of *quacks in the ranks of the profession*.

A NEW ATOMIZER.

A few months ago we called the attention of our readers to an apparatus invented by Dr. J. De Beer, of Boston, for the application of steam in fumigation of local parts, the extremities, the head, and even of general vapor bath, showing, therefore, how advantageous this little application was.

To-day we take pleasure in saying a word of another invention of Dr. De Beer, for the antiseptic dressing of wounds.

This atomizer is very simple, and so arranged that a powerful spray of antiseptic vapor can be used, and lasts two or three hours.

In the dressing of large wounds, or of injuries of the foot, which generally require some length of time to be *properly* applied, the veterinarian who is desirous to employ the antiseptic dressing, will find this a most useful instrument.

EXCHANGES, ETC., RECEIVED.

HOME EXCHANGES.—American Agriculturist, Scientific Farmer, Scientific American, Medical Record, Country Gentleman, Turf, Field and Farm, New York Rural, Prairie Farmer, Practical Farmer, Ohio Farmer, Maine Farmer, National Live

Stock Journal, Western Farm and Live Stock Journal, Index Medicus, Medical and Surgical Reporter, The Farm Journal, The American Farmer, The Proceedings of the Medical Society of the County of Kings.

FOREIGN EXCHANGES.—*Revue für Thierheilkunde und Thierzucht*, *Tidsskrift for Veterinærer*, *Journal de l'Agriculture*, *Veterinarian*, *Veterinary Journal*, *Recueil de Médecine Vétérinaire*, *Archives Vétérinaires*, *Mouvement Medical*, *Clinica Veterinaria*, *Gazette Medicale*.

NEWSPAPERS.—*Western Sportsman*, *Western Agriculturist*, *Our Dumb Animals*, *Vermont Record*, *The Ploughman*, *New England Farmer*, *The Leader (Canada)*, *The Farmer's Review*, *The Nation*, *The Gazette (Canada)*, *The Inter-Ocean (Chicago)*, *The Item (Philadelphia)*.

COMMUNICATIONS.—Geo. Fleming, F.R.C.V.S.; Rob. Wood, V.S.; F. S. Billings, V.M.; A. A. Holcombe, D.V.S.; C. B. Michener, D.V.S.; T. B. Rogers, D.V.S.

AMERICAN VETERINARY REVIEW,

JULY, 1879.

ORIGINAL ARTICLES.

THERMOMETRY IN CONTAGIOUS PLEURO-PNEUMONIA.

By E. DELE.*

(Continued from page 108.)

1st. *Podwyn's Stable*.—The 26th of April, 1876, I requested the slaughtering of a pleuro-pneumonia cow in this stable. She had been isolated. The stable where she contracted the disease contained five milking cows, in which I noticed the following temperature.

	Cow No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
April 26.....	39.0.....	37.5.....	37.5.....	not observed.	
" 27.....	40.4.....	37.7.....	38.2.....	" "	
" 28.....	37.8.....	40.9.....	37.8.....	37.8.....	" "
" 29.....	37.9.....	41.3.....	38.0.....	38.0.....	" "
May 1.....	37.5.....	40.5.....	38.0.....	38.1.....	" "
" 5.....	37.5.....	40.8.....	37.5.....	38.0.....	" "

Cow No. 2 was destroyed as pleuro-pneumonic on the fifth of May; the others, inoculated with success, remained healthy to this day.

2d. The 4th of May, 1876, at Verstræten's stable I found

*Translated by A. Liautard, M.D., V.S.

amongst nine cows, one which presented suspicious symptoms of pleuro-pneumonia; her temperature was 40° . She was killed. In the others the thermometer varied between 37.5° and 38.5° . Inoculated, the operation was successful with six.

3d. The 24th of May, 1876, I visited at Keeten, stables infected with pleuro-pneumonia. In one of the sheds, where several animals had died with the disease, a cow thought suspicious by the owner had been placed the morning of my visit. In her, neither my companion Mr. Buerts, Veterinary Surgeon, nor I, could find any symptoms of the disease. We then took her temperature, it was raised to 40° ; certainly the disease would soon be manifest.

4th. The 26th of May, 1876, I was called at Borgerhout to decide if a cow was affected with pleuro-pneumonia. She was down and unable to get up; and, therefore, auscultation and percussion being impossible, I took her temperature in the rectum. It registered 38° , and I concluded that the animal had not the disease, as proved the next day at post mortem.

5th. The 11th of June, 1876, a cow was sick at Anvers. Another had been killed three weeks before; I had her lungs exhumed and satisfied myself by examination that she had died with the disease. I had no doubt that the animal in front of me had pleuro-pneumonia. I could not doubt it when her temperature marked 40.5° . Two other cows which had been tied with her had a temperature of 38.9° and 38.3° . The first cow was killed and showed the lesions in the lungs. The other two are yet healthy, but I fear they will ultimately succumb to the disease—they were not inoculated.

Without mentioning other observations, I think from the above the following conclusions can be admitted.

1st. When a bovine shows a temperature of 38.9° to the maximum, pleuro-pneumonia is not to be feared.

2d. If, in a herd which had been exposed to contagion, an animal shows a temperature of 40° or above, she is suspected and must be isolated.

3d. In an infected herd, the bovine animal in which the thermometer shows 40° or above will *probably* contract the disease.

I say *probably*, for the high temperature may indicate the invasion of another febrile disease.

Of course these conclusions are somewhat incomplete.

This part of my paper was submitted to the Academy of Medicine in June, 1876, and it was plain, in reading it, that I was a partisan of thermometry as means of diagnosis of pleuro-pneumonia, in bovines which had been exposed to the contagion but presented as yet no other symptoms.

It is in Mr. Brown's reports to the Privy Council that the use of this means of diagnosis is recommended, and in a circular of the sixteenth of January, 1874, that it is indicated as already reported.*

This measure was so severe and important that I took the resolution to experiment on the means of diagnosis thereto indicated.

First, I will observe that a weekly visit is insufficient; visits must be more frequent, if one desires to protect healthy animals from contagion. Before relating my numerous observations, I may present some notes found amongst my journals.

Mr. Fleming, editor of the *Veterinary Journal*, advises to introduce the instrument in the rectum to a depth of one decimeter, and to leave it about five minutes. In the vagina he has observed a difference of less than 0.2° to 0.5° , a difference, which, according to Gerlach, is about 1° . Mr. Fleming found also a difference between the morning and the evening, or after exercise. He gives for normal temperature, 38.5° for the bull, 39.25° for the cow, 39.5° for the calf. The *Veterinarian* of 1869 publishes an article from Dr. Richardson, which fixes the temperature in the ox to 101° Fah. He says that an increase of the temperature of a warm blooded animal is fatal at 11° or 12° Fah., and that he never saw a case of recovery after an increase of 12° . In this paper, no more than in that of Mr. Fleming, it is not a question of pleuro-pneumonia. In the same journal, in 1870, two other articles on the same subject are found.

In the first is reproduced an article from Mr. Mayor. The observations reported are on the horse, and speak of the effects of

*June number AMERICAN VETERINARY REVIEW, p. 108.

some drugs on the temperature of the body. In the discussions following, Mr. Armatage guards against the confusion between the elevation of the temperature caused by drugs and that resulting from certain diseases. There is elevation of temperature after exercise, after meal when the animal is at rest.

The remarks of Mr. Armatage were published under the title: "The Thermometer as a Means of Diagnosis in Veterinary Medicine." In that discussion Mr. Hunting called the attention upon the different indications furnished by two thermometers of the same make, a fact which may be a source of errors.

The second article reproduces a paper from Mr. Poyser, *upon the thermometry in pleuro-pneumonia*. It was only after Mr. Gamgee had recommended the use of the instrument in rinderpest, that Mr. Poyser used it in pleuro-pneumonia. In both of these diseases there is an elevation of temperature, as in all inflammatory diseases: but it is not so great in sporadic as in zymotic diseases. According to Mr. Poyser, the thermometer is a sure aide-diagnostic to distinguish contagious pleuro-pneumonia from sporadic affections, with which it is often confounded.

During the last period of the penetration of the virus in the economy, many changes take place: inflammatory fever gradually appears, and during eight or ten days it seems to stimulate all the functions; the fever takes hold of the whole organism, as indicated by a slight increase of temperature. Though the cow feeds well, milks as usual and presents a normal temperature, there is a little bronchial irritation, characterized by a cough becoming daily more frequent. Mr Poyser doubts not, that, during that inflammatory stage, generally increasing, the animal has accesses of chills indicating progress of the disease, which increases rapidly and in such a degree that at a given time the disease is recognized by everybody; only then is the veterinarian called. He then notices that the skin of the animal is dry, that he is agitated, anxious, that his respiration is accelerated, his pulse not full, as says Mr. Fleming, but small and frequent, eighty per minute, that the milk is reduced more or less, etc., etc.

"If," says the author, "one has the opportunity to examine an animal sixteen days before those signs are manifest, he will find

that, where the animal is not out to pasture, the thermometer will register 103° or 104° Fah. In this state there will be also anxiety, cough, the skin will be shying. But all well considered, there will be signs of elevation of temperature due to an inflammatory condition, having its seat in the thoracic cavity. When the thermometrical examination is made on the first day, it is found that 104°, 105° Fah. is often registered; according to the intensity of the attack, the time where the visit is made, the age of the animal, whether the animal is in or out of doors, whether it is in winter or in summer. From that time to the complete development of the disease the temperature increases daily so as to reach 107°, 108° Fah. in the vagina, or even 109° in the rectum. I will add that, as maximum of temperature, I have obtained 107° Fah. in the vagina, and have seldom seen animals in these conditions recover.

“In the sporadic form of pleuro-pneumonia, in gastro-bronchitis, in pneumonia, bronchitis, pleuresy, gastritis, gastro-enteritis, and similar diseases, though the temperature may be very high, I never found a temperature above 104°, 105° Fah. in the vagina. Consequently, no matter how alarming the symptoms may be, if the temperature does not go above 105° Fah. it is easy to conclude that there is no pleuro-pneumonia present. As soon as there is a noticeable lowering in the temperature, it may be presumed that the period of increase is ended; the whole organism is infected. there is a kind of rest in the vital activity. If the economy is not too much exhausted, and the organic alterations not too advanced, nature tends to a restoration; if not, the vitality diminishes, the molecular inertic prevails and the animal ends in succumbing. In both cases there is a gradual diminution of temperature, not as rapid however when there is a return to health as when the disease has a tendency to fatal termination. In cases of recovery, as soon as the vital power is somewhat restored, nature begins to rid itself, by excretion, of the products of the disease; excretion which, I think, continues for three months. It is then that, in my opinion, there is danger; it is then the period of infection, of contamination *par excellence*.”

To end this borrowed citation I may report the analysis made

by Mr. Fleming in the *Veterinary Journal*. It relates more specially to the horse, and the author indicates the influence of age, sex, food, exercise, external temperature, of clipping and bleeding upon the internal temperature. He says "Cow of nine years (thirty-ninth observation), average temperature 38.9° C. or 102° Fah. (Krabbe gives 38.8° and Davy 38.9° .) Compared to that of the horse, the diurnal variation was slight. The minimum temperature observed at midnight was 38.7 , and the maximum temperature at five o'clock, 39.1° or 102.3° Fah. Food had no influence." Siedamgrotzky makes the following wise remarks, "The temperature of the body depends on the quantity of heat produced and that consumed." Greater will the production of heat be and smaller the consumed quantity, more will the temperature of the body be elevated. Even with an increase of the heat, the temperature of the body will be but little raised if the consumed quantity is great. The principal regulators of the temperature of the body are the epidermis, the hairs, etc., etc.

(*To be continued.*)

IDENTITY IN DISEASES.

By F. S. BILLINGS.

The reflecting peruser of veterinary literature must be often astonished at the freedom with which some words are used by various writers, *used with an entire want of comprehension of their meaning*. Such a one is "Identical."

In the very brief abstract, which we have had the pleasure of presenting to our readers, from the Report of the Bavarian Minister to his Government with reference to the extension of tuberculosis among the cattle of that kingdom, appears the following words,—their connection may be seen in the abstract: "*according to which no more doubt can remain of the identity of the so-often-appearing 'Perlsucht,' 'Tuberculosis,' of cattle, with the disease of the same name of man.*" And in the *Veterinary Journal*, Vol. 6, page 20, may be seen an article from the

German entitled "Histology of the Mammary Gland of the Cow, etc.," to which the translator attached the following footnote: "*Perlsucht is the German name for the disease commonly termed tuberculosis, but it is doubtful if the name is applicable, etc.*" To which the editor of the Journal adds the following: "*In veterinary sanitary science and police, the question as to whether the tuberculosis or perlsucht of cattle is identical with tuberculosis of man has been fully discussed, and the views of Schuppel adduced in favor of this identity.*"

There exists at present among many veterinary writers, who are much better acquainted with literature than with questions belonging to pathology or ætiology, a most intense desire to discover identities between the diseases of the domestic animals and man; so far as the *desire* extends to a better knowledge of the cause of diseases, we also plead guilty, but our desire does not go beyond such cases as are capable of proof by direct experiment. Such *identity* is not to be established with a book of human pathology in one hand, a comfortable easy-chair and good cigar at command, with the waves of smoke circling round one's head, and dreamy reflections of possible identities occupying one's brain; the work by which identities are established is much more severe. In reference to *identity* in diseases, these gentlemen all have the wrong end of rope in hand. *They all seek the identity in the product and not in the ætiological moment.* Like causes do not invariably produce like effects in pathology, if they do in other things, not even by organisms belonging to the same species. Two persons are exposed to the same degree of cold. The one, on account of his intogenetic peculiarities, becomes a pneumonia and dies; the other, being of a tougher nature, becomes a catarrh of the naso-pharyngeal mucosæ and recovers. It always takes two causes to determine a pathological effect. If these two are exactly alike in different individuals, the result *may be* (?) more likely to be the same; *a causa externa equals causa sufficiens.* In the case in question, we find writers assuming that the tuberculosis of cattle and man must be identical, because the *tubercle* is the *result*, the product. We are perfectly aware that not only Schuppel but others pronounce the tubercles in both cases to be

histologically identical. We are also aware that equally competent authorities see sufficient histological variations in their structures to pronounce them different—Virchow, Schmitz, and others. We are also aware that some authors have considered the so-called giant cells to be the diagnostic sign of tuberculosis, while at the present day very many trustworthy authorities decide the same not to be necessary. We can ourselves but express our surprise at the mistaken path men of such discernment as some of the authors upon this question, have taken in looking for the *identity in the product alone*. The *identity* must be sought in the cause, whether the product be tubercle, cheesy, metamorphosis, or what not; the individuality will frequently influence the product. In this very case, we find by cattle the product varying. At one time we have the tubercles in the lungs, at another the “perlsucht,” “grapes” on the serosæ.

Again we have “*tuberculosis pulmonum*” by the horse as an accompaniment of glanders, and again it fails; yet no one would think of assuming that a tuberculous cow had glanders, even if confined in the same stable for a long time with a glandered horse, yet *the identity in the product* is very evident; it may be said by some, “the nasal mucosæ are also affected by the horse,” to which may be answered, innumerable—in fact the most dangerous cases of glanders for the community—are the pulmonary varieties where the nasal mucosæ are often entirely intact. Again the presence of tubercles in the lungs of the horse is not of itself in all cases pathognomonic of glanders, as was very clearly demonstrated lately by M. Trasbot, at Alfort, (see *Revue de Med. Vet.*, vi. Series, Tome v., No. 9, p. 491, article entitled “Tuberculization miliaire non morveuse chez un cheval.”) Notwithstanding the worthy editor of the *Veterinary Journal* considers the question as “fully discussed,” we must ourselves most emphatically assert the contrary. Although *we know* that the elements of the lungs of cattle diseased with tuberculosis, and perhaps the milk, (?) are capable of producing tuberculosis in young animals per the digestive tract, *but in the face of this evidence we must most obstinately assert that the identity between tuberculosis of man and cattle is still a hypothesis, and*

would still be one even though tuberculosis had been experimentally produced in children by feeding them with milk from tuberculous cattle, until the contrary had been proven by direct experiment upon cattle, for this would only prove that this was A CAUSE, not the only cause capable of producing tuberculosis in children. The questions of ætiological identity are only to be settled in the experimental laboratory, and not over the "grüne tasch," as the Germans say. They are as yet among the things we most desire and need to know in reference to disease, and from which we can alone expect beneficial results of a high degree.

We do not wish to be understood as saying that tuberculosis is not the result of specific infection; we only mean to assert that the identity of the specifica is not yet proven, and also to incite all our colleagues by most careful attention to aid in confirming the identity, or in settling the ontogenesis of the specifica with reference to the hypothetic connection between human and bovine tuberculosis. As to *children*, we have no need to make experiments, the feeding experiments are plentiful enough; we have only to enter in connection with the medical profession, carefully gather statistics, and make careful observation, *for the vivisection will be attended to by fond parents, in spite of the society against cruelty to animals.*

Another much more unfounded assertion of *identity* has long enough existed in our literature, and still finds supporters. That is, that the equine family are the subjects of "typhoid fever," "typhus abdominalis." *The name "typhus abdominalis" has been given by mediciners to a peculiar infectious and contagious disease of man, owing its genesis to an unknown specific cause, and this disease does not and has not come to pass by horses, all authorities existing or having existed to the contrary.* That the fever accompanying many equine infectious diseases may produce *typhoid, typhous* phenomena, we should be the last to deny; but we do deny any identity between the diseases and the specific disease of man. Were this ætiological identity a fact, not only ourselves but hundreds of our colleagues would long since have been dead, for we know that this so-called typhoid fever, better "febris putrida," or still better, "septicaemia infectiosum," or "purpura

hæmorrhagica" of English writers, *is not contagious*, and that with attention to ventilation and cleanliness we have no need to isolate patients complicated in this manner. Even if this disease were characterized by similar path-anatomical phenomena to the typhus of man, still we dare not call it *identical*, although in such a case we might be justified in speaking of typhus of the horse, but not infer an identity thereby. But in reality, so long as diseases are not identical in the ætiological sense, it will be much better for comparative pathology for us to have ontogenetic names instead of longing for analogies.

A word as to the word "*fever*." It is time, and among intelligent mediciners it is the case, that "*termini technici*" indicative of *specific fevers* be dropped from pathic nomenclature—in reality there is no such things as *typhus* FEVER and *intermittent fever*. Although this last form which fever phenomena assume has more of the specific about it than any other, hence it is that we find intelligent and thinking mediciners speaking of "typhus," of "intermittent." Every educated person knows these diseases are bound with *fever*; the *fever* is a general condition varying in intensity accompanying various forms of disturbance. The ætiological momenta are specific, but not the fever. Other phenomena, as the "*nieera typhosa*" of "*typhus abdominalis*" of man, the variolæ, may be said to specifically belong to certain diseases, but *fever* is common to them all. Generalization in pathology is something very few men dare indulge in, for the amount of knowledge necessary before one is prepared for such work is something only the Virchows of the world are capable of. The great men of the past, and present also, have all fallen into serious mistakes of generalization. Bichat generalized his "*serosæ*" to an undue extent, Andral his "*exudations*," and Rokitansky his "*croupose productions*"; and to-day the medical world is inclined to let all pus generate by the "*marching-out theory of Cohenheim*," not that these men and others have not seen what they report, but that the reported facts and theories drawn from them are too exclusively extended over the entire phenomena which are open to our study.

EDITORIAL.

HOG CHOLERA, SO-CALLED.

What the disease, known to Americans by the above expressed title, may be, we do not at this time propose to enquire. It is sufficient for us to know that it is infectious and a scourge—two characteristics entitling it to a proper consideration at the hands of our Government.

Great Britain, by a dearly-bought experience, has learned, during the last few years, the bitter lesson that neglect of a danger-beset interest sooner or later ends in disaster. Buried in the graves of her pestilence-stricken cattle lie millions of dollars of her wealth, wrapped in the dead hopes of her once prosperous citizens.

The advice, the warnings, the pleadings of the only intelligence which could have given protection from the impending danger, were unheeded by the powers that govern, while they listened to the seductive reasoning advanced by the zealous spirits which ever find ready access to willing rulers' ears.

The veterinary profession, instead of being first, was last consulted in the matter, and the fatal negligence cost England alone more money than will be expended on the science of medicine during another century.

But has America profited by this experience, which our friends who suffered so kindly hold before us as danger signals? Have the United States acquired wisdom in observing the shoals that wrecked the cattle interest of our mother country? Do our office-holders look beyond the influences which surround the vantage-ground of a re-election, and through the mists of politics see the disasters which their dereliction of duty invite? Unhappily for our future, only negative answers can be vouchsafed to these queries.

The teachings of experience and the repeated warnings of those who would give protection in the hour of need, have fallen alike unnoticed on the perceptions of our representatives. Some-

thing other than immense yearly losses was needed to awaken in the public mind the necessity for measures being adopted that should relieve our animals from the scourges with which they are so seriously afflicted, and it was only after Great Britain refused longer to receive some of our exports, that a degree of attention was turned to this important subject. The results attending the short-lived interest in the matter are anything but flattering to our anticipations; for of the many diseases common to our country, only that of contagious pleuro-pneumonia was considered worthy of legislative interference, while the measures now being enforced in some of our States have not been adopted for the protection of our stock, nor with the expectation that they will prove effectual in eradicating this disease, but simply that a semblance of official protection may serve to allay the fears of other countries and re-open their gates, justly closed against our dangerous exports.

America, with her immense extent of territory and the extraordinary facilities which she offers for the propagation of diseases, promises soon to rival the Old World in the breeding of animal plagues, and our neighbors cannot know too soon for their own interests how extended and serious are the maladies which beset our domestic animals, and how negligent our Government has been in adopting measures for efficient protection.

Of these diseases, the one of hog cholera is undoubtedly the most productive of pecuniary loss. It flourishes to-day with unabated virulence throughout the principal swine breeding districts of the United States. The most fatal and wide-spread of all the scourges known to this animal, it continues to grow in spite of the millions yearly slaughtered for consumption, and yet no hand is raised to stay its progress and but an imperfect effort made to learn its history, its nature or its cause. Neither is there any attempt made by our Government to confine the disease to our own territory, for the exportation of these animals is unimpeded by official restraint, and other countries continue to receive without remonstrance cargoes of these disease-bearing exports.

If we are to judge from our past experience, there is but little prospect of any other state of affairs ensuing until embargoes like

those imposed by England are enforced by other countries against our trade: for it seems that only through the pockets of the exporter can the common-sense of our people be reached on this subject of animal diseases. There are no grounds as yet upon which to hope that the yearly loss of twenty million dollars' worth of hogs will gain for the producer that protection to which he is justly entitled. It is only the interference with free exportation that gains governmental attention, even though such interference amounts to but a tenth part of the loss sustained direct from the disease in question.

The fallacy of such tampering with this most important agricultural interest must sometime dawn upon the minds where now rests the responsibility, and let us hope it will come before we find ourselves the victims of preventible disasters greater even than those which now afflict us.

COMPARATIVE PATHOLOGY,

BY A. LIAUTARD, M.D., V.S.

PIOGENIC FEVER IN A MENAGERIE.

1. *Parotid abscess in a tapir—abscesses in the kidneys.*—In the month of January my attention was called to a tapir belonging to a menagerie in New York, which presented in the parotid region a large swelling extending under the jaw, preventing him from swallowing his food. This swelling was hard, very painful, and in fact presented all the characteristics of a large sub-parotid abscess. Warm fomentations and poultices were prescribed, and the animal's strength kept up with milk and whiskey. About forty-eight hours afterwards I detected, with difficulty, some deep fluctuations, and after exploration with the aspirator relieved him of a large collection of pus, which kept on discharging for some days and healed without further trouble to the animal, his liveliness and appetite having returned as soon as the abscess was

open. About a month after his appetite began to fail again. Sometimes he would stay several days without eating, and still no outside symptoms of sickness could be detected. After lingering some time until the end of March he was found dead in his stall.

At post mortem, the right kidney was the seat of a large abscess containing about fourteen ounces of very offensive pus; the walls of the abscess were adherent to the abdominal sides and to the right lobe of the liver. The left kidney was of normal size, congested, and offered in the cortical substance on its surface two abscesses of small size.

2. *Lingual abscess in a tapir*.—Some time later another tapir, placed in a stall alongside of this one, was suddenly taken with watering at the mouth and loss of appetite. The mucous membrane of the mouth being congested, the assistant swabbed it with a solution of chlorate of potass. Four days afterward he died, and a deep abscess was found in the substance of the tongue.

3. About the same time, in the same menagerie, a zebu had a large abscess under the parotid gland, and—

4. A female camel, nursing a young camel calf, had several lingual and molar abscesses. These last animals recovered without trouble.

5. *Constipation—urinary calculi in a male camel*.—On the 21st of January I was called to examine a male camel, aged, which had been ailing for the past few days. At my arrival I found that he had had no passage from the bowels for about a week, and that for forty-eight hours he had been making violent efforts to micturate, without success. A little drop of bloody urine was found at the end of the penis. The animal was quite uneasy, moving from side to side, from one leg to another, and making violent efforts to micturate, but still without result. On examining the rectum, I found the colon full of hard fecal matter, and the bladder enormously distended.

A diagnosis was made of constipation with retention of urine, probably from reflex action. Several attempts were made to introduce a catheter, which proved unsuccessful. Not knowing the

size of the urethra, I successively tried the smallest horse catheter I had, then the catheter of the human stomach pump, then the smallest bougie I could find, but I had to give up the attempt. The penis being drawn into the sheath, and being unable to bring it out, no idea of the size, or of the location of the opening of the urethra could be obtained. Failing in this attempt, I decided to open the bladder by rectum, which I did by aspiration, removing about seventy ounces of dark, bloody urine. This seemed to give him much relief, and after administering a strong cathartic of oil and sulphate of soda, with prescription of rectal injections, I left my patient.

On the following day he was in about the same condition, had passed no fœces, no urine, but seemed to strain less to micturate. The bladder was full again, and again relieved by aspiration of forty ounces of urine of better appearance; the cathartic is renewed.

On the 23d, in the morning, I found him laying down, and in dying condition.

The post mortem was made a few hours afterwards. The abdominal cavity contained a large quantity of fluid, and the colon was filled with hard fœcal matter. The principal lesions were found in the urinary apparatus. The pelvis of the right kidney, which was very large, contained a peculiarly shaped calculus, greatly resembling a navicular bone, with one face quite smooth and slightly convex, the other having in its centre a little projection extending in the ureter. It weighed six grammes. This kidney was much enlarged, congested and softened. The bladder had a small quantity of clear urine. The mucous membrane was healthy, and showed the two points of puncture made by the aspirator in the upper wall of that organ. The urethra was found to be, at the meatus, of the width of a knitting needle, and when a small probe was introduced through it, directly under the prostate, resistance was felt, and a little calculus of the size of the head of a pin was found imbedded in the canal, closing it up entirely. Going towards the free extremity of the urethra, this canal was noticed to become smaller, so that at its end it was the size of a pin, and at about two inches from the opening a fine

wire introduced came in contact with another resisting mass. This proved to be four little calculi imbedded together and closing also the urethra, which opened at the end of the penis under a little filiform prolongation about one inch in length.

6. *Fracture at the hock joint—urinary calculi in a female camel.*—On the ——— a female camel was brought to the American Veterinary College suffering with a comminutive fracture at the tarso-metatarsal joint. Being reported to be in calf, an unsuccessful attempt at treatment was carried on, but ultimately she was destroyed. Besides the lesion of the hock, which showed the crushing of the upper extremity of the metatarsus on its inner side, both kidneys were found to contain a calculus more developed on the right than on the left kidney. That of the right, as in the first case, assuming a shape analagous to and much resembling a navicular bone. That of the left kidney was much smaller.

PLEURO-PNEUMONIA.

REPORT OF THE CATTLE COMMISSIONERS OF MASSACHUSETTS RELATING TO PLEURO-PNEUMONIA IN 1863.

(Continued from page 124.)

COMMONWEALTH OF MASSACHUSETTS.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts :

The Commissioners on Contagious Diseases among Cattle submit the following report :

Calls have been received to visit ten different towns during the last year, in three only of which has contagious pleuro-pneumonia been found, viz.: Chelmsford, Dedham and Nahant.

At the time of our first visit to Chelmsford, February 7th, one of a herd belonging to Charles Adams had died about two weeks previous, and two others were slightly ill.

The carcass of the dead animal had been carried to the woods, about a mile distant, and left above ground, and had become frozen. On examination, there

was sufficient evidence that pleurisy had existed, but no evidence of diseased lungs, one of which had been carried away. As the symptoms of the two that were ill were not sufficiently positive, it was decided to isolate the herd, and await further developments.

On the 8th of March another visit was made, (a request having been received) when two more of the herd were found sick, one of which had the night previous aborted a calf.

One of the first alluded to was selected, (percussion giving a flat sound over the whole thoracic region of the right side) and slaughtered.

The autopsy showed adhesion of the whole of the large lobe to the ribs, which was evidently of long standing, probably a year or more; several physicians being present, all were of this opinion.

On cutting through the lung, unmistakable evidence of contagious pleuropneumonia was present.

The isolation of the remainder of the herd was continued, during which Mr. Adams fed, with grain, one of the cows which showed but slight symptoms of illness, when we were present.

On the 8th of June she was slaughtered, and the examination disclosed adhesion to exist to the sixth and seventh ribs, and to the vertebrae. A cyst, containing a mass weighing, by estimate, two pounds, was found in the lung. As no other cases had occurred from the 8th of March to the 8th of June, the herd was released.

It should be noted that Mr. Adams' herd consisted of five cows, which had been kept on his own farm during the season, a yoke of oxen, four two-year-old heifers, and three cows which he had kept in at pasture in Ashburnham. The first animal taken sick was one of the heifers he brought from Ashburnham about the middle of August, and was taken sick about the 20th of December.

The Commissioners were unable to find that pleuropneumonia had ever existed in any herd within six miles of Mr. Adams' farm.

Our attention was next called to the herd of Avery Whiting, of West Dedham, consisting of three cows only. The history of this herd is as follows:

In March, Mr. Whiting purchased the three cows of a dealer; the one first sick came from the north part of Waltham the market day previous to his purchasing them. By the statement of Mr. Whiting she was taken sick about April 1st, but according to that of his hired man, after the 21st, and was very sick for some time, but gradually recovered her appetite, and on our first visit gave seven quarts of milk per day. She was thin of flesh, and gave evidence of having suffered severely.

On the 13th of June another was taken sick, which died the 3d of July. On the 4th an examination was made, which disclosed the right lung wholly consolidated, and weighed twenty-six pounds. The thorax contained at least three gallons of serum; a thick coat of lymph intervened between the pulmonary and costal pleura.

On the 22d of the same month the third cow was taken sick, and on the 24th she presented the usual symptoms of pleuropneumonia. Both of those that survived were kept until the 22d of November, when they were slaughtered; a description of them is given in the report relating to experiments which have been conducted during the past year.

As the pastures of Mr. Whiting are adjoining those on which a large number of cattle are kept, and his cattle remained there until one or more of them became sick, when they were secured in the barn, considerable apprehension existed that the disease would spread; consequently, directions were given that the cattle in the immediate vicinity should be isolated, which was done in a suitable length of time, when no further sickness appearing, they were released.

The next case to which our attention was called was a cow belonging to Mrs. Cary, of Nahant. She was purchased of a dealer in Lexington, in June, and had been kept at Nahant until the time she died, October 5th. The lungs were sent for examination, and it was estimated that the diseased one would weigh more than forty pounds. It presented the usual characteristics of the disease in question.

It is proper to state that this animal was kept in the same enclosure with another until she became sick, when she was shut up by herself in a stable, and as it was impossible to ascertain with certainty whether the other cattle in town had been exposed, or, if any, how many, therefore they were all prohibited from being sent away till the Commissioners were satisfied that the disease had not been communicated, when they were released.

Since the appropriation by the Legislature of \$20,000, in 1864, the Commissioners have expended the sum of \$7,943.78, a considerable part of which has been for the experiments ordered by the executive department.

Several towns have drawn sums for claims made previous to the appointment of the Commission, amounting to \$1,906.36, leaving a balance of \$10,149.36, which reverts to the treasury.

The conclusion of the report of the experiments made by order of the executive department to determine the question of the "contagiousness and curability of the disease among cattle (pleuro-pneumonia); also whether for the purpose of working, milking or breeding they have been injured by exposure to disease, or by having had the disease; and also to ascertain by slaughtering them, at a sufficiently remote period, whether, and to what extent, their fattening qualities have been injured," is hereby respectfully submitted.

A report relating to the contagiousness of the disease, as shown by this experiment, was in May last sent to the Legislature and printed, (House Document No. 292).

The cows were kept at Newtonville until May 18th, when a bull was purchased, and with the cows was sent to pasture at Lovell's Island, Boston Harbor.

June 9th.—Visited the island and found them all in thriving condition, excepting the roan cow, which calved March 18th; she looked haggard and dull, had staring coat, and was poor in flesh compared with the others, and in consideration of the large amount of food on the island.

The calf sucked the cow during the summer.

July 11th.—Again visited the island and found all, with the above exception, had accumulated flesh rapidly. In July, the officers in charge of Lovell's Island directed that all the animals be removed, as some improvements were to be made; therefore, Hog Island, situated in Hull, was selected, and the cattle removed there.

A visit was occasionally made, and the animals examined. No material

change occurred in their condition until the excessive drought dried up the grass, when all of them lost flesh.

September 19th.—The four cows, bull and calf, were slaughtered in Brighton.

AUTOPSIES.—The roan cow (No. 1, Maine) was first killed. On removing the right lung it was found adherent to the ribs at its lower border, about five inches in length and four in width; that portion of the lung appeared wasted, and on the inner surface was a cicatrix, as if suppuration had taken place, and ulceration sufficient to open the cyst, causing a discharge of the contents of the cyst into the thorax. A small cyst was found in the immediate vicinity. There was also adhesion of the left lung. All the other organs appeared healthy; the uterus was empty.

The next killed was No. 3, Maine cow. All the viscera, both thoracic and abdominal, were healthy; the uterus contained a well developed foetus.

The No. 4 Maine cow had a small portion of the pulmonary adherent to the costal pleura; the lungs were healthy, as were all the other organs; the uterus contained a foetus not more than four weeks old.

No. 1, Weston cow.—The superior part of the large lobe of the left lung was adherent to the ribs and to the vertebræ, and in the lung was a cyst containing a mass about three inches in length, and two in breadth. Otherwise, the organs were perfectly healthy. The uterus contained a foetus about two months old.

All the organs of the *bull* and *calf* were healthy.

Two or three cows owned by Avery Whiting, one of which was attacked by the disease in the latter part of April, the other the 22d of June, were sent to my place in West Newton on the 31st of July. The first mentioned calved a few days previous to the attack, and on the 24th of June, when I first saw her, had a good appetite, and gave about seven quarts of milk per day, was thin of flesh, and coughed frequently.

The other showed the first symptoms of illness on the 22d of June, previous to which she gave three gallons of milk per day, and was in good flesh. On the 24th of June she presented the following symptoms:

The pulse was eighty per minute, small and wiry; respiration thirty, short and apparently painful; the coat stared; the eyes were dull; and considerable saliva flowed from the mouth. By percussion, a dull, flat sound was emitted on both sides of the thorax. The appetite was entirely lost. Occasional visits were made. No material change in the symptoms appeared until the 13th of July, when the appetite began to improve.

Her condition, August 1st, was little better than a living skeleton; the hair stood out and had an unhealthy appearance; she coughed almost incessantly both night and day; the secretion of milk was lost, and with the best of food for producing milk,—green grass and sweet corn fodder,—not over half a pint a day could be drawn.

The appetite was voracious, yet but little improvement was manifest in her condition for two months, when the cough partly subsided and she began to gain in flesh, and continued to do so until she was slaughtered, yet no milk was secreted. No one would suspect she was diseased unless she was compelled to move a few steps quickly, when a fit of coughing would invariably follow.

With the first mentioned cow, but little improvement was produced in her condition.

AUTOPSY, Nov. 22d, seven months after being attacked with the disease.

The superior middle portion of the right lung adhered to the ribs and diaphragm, eight inches in length and six in width; the lung contained a solidified mass. The left lung and heart were healthy, as were all of the abdominal viscera; no fœtus in uterus, although she received the bull in June. The autopsy of the second cow, five months after the attack, showed extensive adhesion of both lungs to the ribs and diaphragm, and nearly in the same locality, with an incysted mass in both. The other viscera were healthy.

The results from the foregoing experiments are as follows:

1st. That two of the four cows brought from Maine had the disease from an exposure of twenty-four hours, to two animals from the herd of Levi Smith of Ashby.

One of the four cows had the disease from a subsequent exposure. The other cow escaped the disease.

The two Weston cows were exposed for one week to two of the Maine cows, fourteen days after they had been attacked with the disease.

There is no evidence that either of the Weston cows took the disease from this exposure.

They were afterwards exposed to a calf which had been sick but four days, for the space of fifteen days, and fifty-seven days after the first day of exposure one of them was sick. Seventy-one days after the exposure the second cow became sick and died.

The autopsies disclosed the fact that both of these animals had pleuro-pneumonia.

2d. No working animals being in our hands for experiment, we give no conclusions in relation to the effect of the disease on such animals.

3d. It is evident that if a cow is attacked with the disease when having a large flow of milk, the secretion will be partially or wholly suspended, depending on the violence of the attack and the duration of the acute disease.

4th. Three of the five cows became impregnated, the one which escaped the disease having the oldest fœtus.

5th. From the foregoing, (and previous observation confirms the opinion,) it is evident that animals which have had an attack of pleuro-pneumonia will fatten readily, although considerable lung tissue has been lost.

Respectfully submitted.

E. F. THAYER,

For the Commissioners.

DECEMBER 27, 1865.

COMMONWEALTH OF MASSACHUSETTS.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts.

The Commissioners on Contagious Diseases among Cattle, in submitting their Report, congratulate the people of the Commonwealth upon the *probable* extinction of the disease, (no case having come to their knowledge since October, 1865,) which but a few years since threatened to be of so serious a character, viz., *pleuro-pneumonia*.

The Commissioners have been called to several towns during the past year to examine diseased animals, yet not a case of contagious pleuro-pneumonia has been found.

A concise history of the disease since its first appearance in Mr. Chenery's herd in Belmont to the present time, is deemed of sufficient importance to warrant its insertion in this Report.

In the latter part of May, 1859, four cattle arrived from Holland and were taken to the farm of Mr. Chenery. Two of them were sick, and in a few days died. Another soon after sickened and died. At the time of the death of the third, three calves were sold to go to North Brookfield, one of which was taken to the herd of a dealer for treatment, being sick. The dealer, trading in cattle, as usual, soon disseminated the disease far and wide.

In the following April an Act was passed "to provide for the extirpation of the disease called pleuro-pneumonia among cattle," which gave the Commissioners power to cause to be killed all cattle in herds where the disease was known or suspected to exist. The disease had, at the time of the passage of the Act, been extensively scattered, and in a short time the appropriation (\$10,000,) was absorbed. A larger number of cattle having been exposed than was first estimated, an extra session of the Legislature was called to revise the law, and to provide the means of executing it. A new law was enacted, and received the sanction of the executive on the 12th of June.

No new outbreak of the disease occurred during that year, nor in that locality, as far as is known, to the present time. The number of cattle killed was nine hundred and thirty-two.

For more than a year nothing was heard of pleuro-pneumonia. In fact, those most directly interested were confident that the disease was extirpated. Early in the following winter, however, it was reported that it existed in the towns of Milton, Dorchester and Quincy.

A Board of Commissioners was appointed, who, upon investigation, found it to be too true. A pair of cattle was purchased at Brighton, which were taken to Quincy, and both died. No further history of them could be learned, as it was impossible to identify them; but the spread of the disease could in every instance be traced to contact with the animals in the herd in which they were at the time of their death, as shown in report of that year. The number killed during the year was one hundred and fifty-four.

For several months the Commissioners felt confident that the disease was eradicated. In February, 1863, the Commissioners were called to examine sick cattle in the north part of Waltham—also in Lexington. It proved to be pleuro-pneumonia, and its origin was directly traced to a dealer, and from the sale of cattle by him to eight different herds. The appropriation (\$1,000) was soon exhausted, consequently the Commissioners resigned.

The selectmen of several towns were called upon to execute the law, which, (some of them at least,) reluctantly did, yet the disease still prevailed. Accordingly the present Board of Commissioners was appointed in April, 1846.

It was found that several herds were affected, and that the origin of the disease was in Lexington or that immediate vicinity. Seventy-four cattle were killed during that year.

In 1865 but three herds were found affected with the disease, from which four animals were killed.

The Legislature at its last session, in a proviso to the Resolve allowing the sum of twenty thousand dollars to the use of the Commissioners, required them to make investigation and report upon the curability of the disease.

No cases of the disease having come before the board the past year, they were of course unable to comply with the request, and can only refer, for information on this subject, to the report of last year, on the experiment made by the Commissioners during the years of 1864 and 1865.

The uniform course of the present board has been to isolate all herds they have found affected with the disease, and such other cattle as had in any way been exposed to diseased herds, to kill such as they were satisfied had the disease to that extent as to make them useless to the owner, and, *in but few instances*, only such. The result of our action contrasts favorably with that of Great Britain in the management heretofore of contagious diseases among cattle.

In Great Britain, during the past two years, public attention has been diverted from *pleuro-pneumonia* to the more terrible disease, *rinderpest*.

We here quote from Prof. McCall's introductory lecture before the class of veterinary students, November 6th of the present year, at Glasgow, Scotland, to show that *pleuro-pneumonia* is still making its ravages among the cattle of that country:—

“For upwards of twenty years this country has annually lost thousands of cattle from one contagious disease alone, viz., *pleuro-pneumonia*, and at the present moment it is busy among our herds. One gentleman present has lost twenty-two out of a herd of thirty five; and a few weeks ago I was consulted by a farmer who had lost twelve out of twenty, and now the disease has appeared among his young stock. The number of deaths in these instances is appalling, and the loss, directly and indirectly, cannot be estimated at less than £900 or £1,000.

“The *plague* has drained the pockets of farmers and dairymen of thousands sterling; but thank Providence we are now free of the disease in this country. *Pleuro-pneumonia* has drained our pockets of millions of pounds, and she is still in our midst, the great enemy of our stock. * * * * * Use the means I have indicated, and the means which the *plague* has taught us to be of benefit in controlling contagious diseases, and if the contagious *pleuro-pneumonia* of cattle now decimating our stock is not thereby extinguished—‘stamped out’—its operations will be so curtailed, that the losses resulting to stockholders from the presence of the disease will sit lightly upon their shoulders.

“Prof. Simonds, in his introductory address, delivered at the Veterinary College in London, in October, says: ‘From this time the disease called *rinderpest* spread in all directions, the attacks gradually rising until they reached, in the week ending February 17th, 1866, the alarming number of 15,706. The first order in council was dated July 14th, 1865, and from that period until now, order has succeeded order, with more or less influence in checking the progress of the malady, and providing for the altered state of things arising out of its existence.

“‘The passage of the Cattle Plague Act was, however, the real cause of the diminution of the cases which has since taken place, and which emboldens us to hope that ere long the disease will be entirely exterminated. For the first time in the history of the visitation the attacks were returned as under 100 for the week ending September 1st, 99 being the exact number reported by the inspectors.’ * * * * * He quotes ‘from the official returns the amount of loss which England herself, apart from other parts of Great Britain, has sustained. The total attacks are returned as 198,406. The animals killed, (diseased,) amount to 77,508; those which died to 90,415; the recovered to 21,589; and the unaccounted for to 8,894. Besides which, no less than 38,356 have been slaughtered healthy, to prevent the spread of the malady. These figures are truly formidable; but they fail to show a tithe part of the distress and ruin which

has been brought on hundreds of thriving and industrious farmers and cattle-owners by this dreadful visitation.'

"In speaking of Scotland, he says: 'It appears from the official returns that the attacks in Scotland amount to 46,861, being 4.841 per cent. of the entire stock of the country.'

"In Ireland but fifty cattle were exposed to the disease; twenty-nine were attacked and either died or were killed, and twenty-one were slaughtered healthy.

"Nothing can show more clearly the propriety of the 'stamping-out process' than this result. In it we have a parallel with what took place in France, where only forty-three animals, healthy and diseased, were sacrificed to the pole-axe, the country being thereby freed from the plague."

The Cattle Plague Act alluded to above, resembles the law passed by the Legislature of Massachusetts at the extra session, in its general features; and the course adopted by the authorities of Great Britain, in relation to rinderpest, is similar to that taken by the present Board of Commissioners in Massachusetts in relation to *pleuro-pneumonia*.

Prof. Simonds further says that a focus of the disease still exists; consequently the law passed by Congress, preventing the landing of any cattle from foreign seaports, should be continued in force.

We append to this Report a statement of the entire expenditure by the State of Massachusetts for the extirpation of the disease since its commencement in 1860, obtained from the treasurer's books, which is \$67,511.08. In addition to this amount, the several towns where the disease has been found have paid one-fifth of the cost of isolation, and of the appraised value of all the cattle killed, amounting to a sum which we estimate at \$10,000. (There is no printed report of the number of cattle killed by order of the selectmen of towns in 1863.)

The amount paid from the treasury on account of pleuro-pneumonia is as follows:—

In 1860,	.	.	.	.	.	.	.	.	.	\$28,733.21
1861,	.	.	.	.	.	.	.	.	.	14,118.43
1862,	.	.	.	.	.	.	.	.	.	4,525.86
1863,	.	.	.	.	.	.	.	.	.	6,657.32
1864,	.	.	.	.	.	.	.	.	.	7,467.07
1865,	.	.	.	.	.	.	.	.	.	5,622.84
1866,	.	.	.	.	.	.	.	.	.	386.35
										<hr/>
										\$67,511.08

E. F. THAYER,
CHAS. P. PRESTON,
F. D. LINCOLN,

Commissioners.

DECEMBER 25th, 1866.

COMMONWEALTH OF MASSACHUSETTS.

To the Senate and House of Representatives of the Commonwealth of Massachusetts :

The Board of Commissioners on Contagious Diseases among Cattle, which has been continued in accordance with the wishes of His Excellency the Governor during the past year, the object being to guard against the introduction of the cattle plague (rinderpest) which has caused so much loss in Great Britain during the past three years ; or the possible breaking out and spread of the disease called "pleuro-pneumonia," which has heretofore prevailed to an alarming extent in this Commonwealth, congratulate the people upon the exemption from the former, and the probable extinction of the latter from our herds.

From the latest reports it appears, through the energetic action of the English government, the rinderpest is nearly "stamped out," consequently the fear that it would be brought to this country is lessened. Should, however, the calamity occur, it is hoped that the same vigorous measures adopted by Massachusetts to extirpate pleuro-pneumonia, and Great Britain the rinderpest, would be executed without delay.

These measures, together with the restriction placed upon the importation of cattle by our government, have so far protected us against the rinderpest. The active and timely exertions made in our Commonwealth have saved our herds from the devastation which was so seriously threatened by the pleuro-pneumonia, so that by the expenditure of a very small proportion of the appropriations made in 1864 and 1866, we have now entire confidence that it is eradicated ; and from what we know of the nature of the disease, we feel certain that it will not again appear among our herds unless, as in 1859, imported from beyond our limits.

As the Commission has accomplished the work for which it was appointed, in tendering to His Excellency our resignation we congratulate the people on the success which has been insured by the prompt action of the State Board of Agriculture, and especially its Secretary, in connection with the Legislature, and with the co-operation of many of the leading agriculturists and breeders of stock among our citizens, in eradicating one of the worst forms of contagious disease which has been found among the cattle ; and we would at the same time congratulate the breeders of stock that the investigations of scientific men in relation to this, as well as other forms of disease peculiar to animals, is tending in so large a degree to save them and the country from such great losses as they would otherwise inevitably incur.

The Commissioners have been called in several instances during the past year to examine diseased cattle.

In one herd only, and but for a few days, during which three cows died, was there any evidence of a contagious disease found. The character of the disease is unknown, as the animals had been buried before our arrival at the farm.

E. F. THAYER,
CHAS. P. PRESTON,

Commissioners.

DECEMBER 30, 1867.

PLEURO-PNEUMONIA IN CONNECTICUT.

From the report made by Prof. Cressy, of the Amherst, Mass., Agricultural College, E. H. Hyde, chairman of the Connecticut Cattle Commission, and secretary of the Connecticut Board of Agriculture, it appears that pleuro-pneumonia prevails to an alarming extent in portions of Fairfield Co., Conn., and Westchester Co., N. Y. These gentlemen made a thorough examination of the infected herds, and this report can be relied on. One farmer, S. S. Mead, of Greenwich, Conn., bought a calf in New York city last September, which died of pleuro-pneumonia within a month after its purchase. Since then Mr. Mead has lost five cows and another calf from the dreaded disease, while several others in his herd have been more or less affected. On an adjoining farm two cattle have died, another reported dying, and nineteen cows and a yoke of oxen sick. Another farmer has his herd exposed, and has already lost several cows. It seems that this disease is liable to break out again, in a herd that has once been infected, even though several months have passed without any appearance of sickness. A farmer in Fairfield Co., Conn., bought some cows from Westchester Co., N. Y., some five years ago, and lost several from pleuro-pneumonia, but the herd has been apparently free from the disease for three years, until quite recently, when it broke out again.

In Connecticut the authorities have no power to kill diseased animals; the infected herds are placed in quarantine. We would caution western farmers against buying breeding stock from the east unless they can receive undoubted assurance that the animals have never been in an infected herd, or in any way exposed to the disease.—*Prairie Farmer*.

CONTAGIOUS PLEURO-PNEUMONIA IN NEW JERSEY.

Editor Review :

On the 24th of March, 1879, I had the honor to receive, from the authorities of the State of New Jersey, an appointment as Veterinary Surgeon-in-Chief to the State, with the ostensible

duties of advising what measures it were necessary to adopt, in that contagious pleuro-pneumonia might be suppressed and finally eradicated ; to determine whether suspected cases were genuine, and to supervise and instruct the staff of Veterinary Inspectors appointed by the State.

On the 25th of April following, I found it necessary to withdraw from the service of the State, and so tendered my resignation. What the causes were which impelled so unpleasant a termination of my work, may be seen from the facts set forth below.

I shall not attempt the presentation of any arguments upon the question, Does pleuro-pneumonia contagiosa exist in New Jersey? for those would-be veterinary surgeons who deny its presence there, are devoid of that degree of intelligence necessary for a just comprehension of the nature and importance of pathological lesions when seen, or else they are actuated to such expressions of opinion by motives which all honest men ignore.

Professional mistakes on questions of such vital importance as are involved in the treatment of so serious a scourge as this disease has ever proved itself, even when made in good faith, will prove disastrous to the growth and best interests of veterinary surgery for a long time to come, and seriously impair the future success of all our live stock interests. But when these mistakes are intentionally made for the purpose of personal gain, or that they may serve for the moment to satiate the cravings after notoriety of a misconceived and perverted ambition, the author, to all intents and purposes, steps beyond the dividing line and makes himself a criminal.

Contagious pleuro-pneumonia *does* prevail in New Jersey, and the questions which interest us all are:

How extensive is it?

Is it spreading and increasing?

Are the western States endangered?

Does it endanger our live stock export trade?

Are proper steps being taken to eradicate it?

There can be no question that at least eleven, and, possibly, thirteen counties within the State are more or less infected. Of these eleven counties two were under strict quarantine, Bergen

and Hudson. Four hundred and sixty-four herds of cattle were inspected in Bergen County, nine of which were infected with pleuro-pneumonia. These nine herds contained one hundred and twelve animals, thirty-eight of which had the disease. On the 23d of April but a small portion of Hudson County had been inspected, yet forty-nine stables were found infected, with nearly one hundred cases of the disease. This county contains Jersey City, and owing to the general traffic in cows, and the close proximity to the centre of infection of New York State, is probably to be ascribed the fact of its extensive infection. That any other county contains so large a percentage of diseased cattle is extremely doubtful; yet a short experience with the disease teaches that not even an approximate estimate can be made in any district until a thorough inspection has been instituted.

The question—Is the disease spreading and increasing?—can be answered only in the affirmative. The practice of most cattle owners of selling to dealers those animals which become infected, has been the means of rapidly spreading the disease from herd to herd; for these diseased ones were, as a rule, immediately replaced by healthy ones, which in time became affected, and in their turn were sent forth upon their mission of contamination. This reprehensible practice served both to maintain the primary centres of infection and to create numerous new ones. Another source of general contamination was the practice of indiscriminate pasturing upon the commons, where the diseased and healthy constantly intermingled. Lastly, wherever the quarantine of an infected herd could be made effectual, the disease rapidly spread unless all the animals were infected when first seen, so that cases rapidly multiplied upon our hands.

The third question permits of but one answer, and that also is affirmative. The cattle of our western States are in imminent danger of becoming infected for the simple reason that no precautions are being taken to prevent it in some of our infected States, and especially is this true of New Jersey, Pennsylvania, Maryland and Virginia. True, the traffic in cattle is principally from the west to the east, but there is not a single obstacle interposed which would prevent diseased animals being carried to

the west ; and unless measures more efficient than any heretofore adopted are soon made operative, it is but a question of time when the whole country will be in New Jersey's most unfortunate position.

It is hardly necessary to tell the members of the profession in America, who know so well the ability of foreign veterinarians, and their determination to prevent the importation of infectious diseases, that anything which endangers the health of our live stock promises to be disastrous to our export trade in cattle. Even granting that pleuro-pneumonia does not spread to the west, cattle shipped to New York, Philadelphia or Baltimore are in danger of becoming infected while *en passage* to the points of debarkation, and the veterinary surgeon who represents otherwise is willing to sacrifice an honest expression of opinion to the public demand for an unimpeded traffic in live stock.

That proper steps have been taken to eradicate contagious pleuro-pneumonia from New Jersey cannot be claimed by any one who knows the nature of the disease and the methods attempted to be enforced. Prior to the commencement of my labors in that State, the authorities consented to the proposition that *all* cases of the disease should either be killed and buried, or in case they were fat, slaughtered for food ; and that those cattle belonging to the herds infected, but not yet diseased, be kept under strict quarantine until such time as all danger had passed away. Even the propriety of killing *all* the animals in an infected herd was favorably discussed in conjunction with the question as to whether the law could be so construed as to permit its being done. Inoculation was conceded to be an unwarranted practice under the circumstances and was at once prohibited. No one can deny that the outlook was most favorable as presented at this stage of affairs ; but subsequent events determined that vacillation, not steadfastness of purpose, was the principal characteristic of the power which attempted to accomplish an end without any knowledge of the controlling laws of cause and effect.

On or about the 9th of April a herd of fourteen cattle in Morris County were visited for the express purpose of disposing

of them, since nearly all had the disease, and when it was recommended that they be killed at once, the owner consenting and being anxious to protect himself and neighbors, the courage of the Executive's representative gently oozed away, while his intelligence evolved the remarkable statement, "I cannot establish such a precedent."

A herd of imported Jerseys in Middlesex County were quarantined and the infected ones left to die and spread the disease, the owner's and my own protestations against the danger and injustice of such measures being met with the practical (?) observation: "He introduced the disease himself, and if he wants to get rid of it, let him kill them."

On the 16th of April I received the following telegram in response to one of my own, asking for instructions: "No animal should be destroyed without, in the judgment of two veterinary surgeons, it is the last resort to prevent the spreading of the disease." With a hundred cases of the disease on hand and rapidly spreading in many of the herds quarantined, and new herds being daily discovered that were infected, I asked that I be instructed to destroy *all* animals with contagious pleuro-pneumonia. This was most emphatically denied me on the ground "We don't know where it will lead us."

On April 23d, I was orally instructed to destroy *all* cases of the disease in Bergen County. On the 24th, two were killed and buried, and on the 25th four more were to have been destroyed in that County. The owner of three of the condemned cows refused to have them destroyed without seeing my authority for so doing, and, since I had no such authority to show, the sheriff who was present to enforce the law, refused to act in the matter, and so I was left powerless to proceed. Telegraphing for instructions, I received the following: "You had better return." Thus ended the mission upon which I was sent by the people's representatives, who would not be present to enforce the law entrusted to their hands, nor give me the authority to accomplish that for which I had been sent. My resignation was at once tendered and accepted in due time. The Executive's representative, after sacrificing me for the purpose of testing public opin-

ion in the matter, kindly told a protesting cattle owner, for whom I had destroyed three cows, that the veterinary surgeon-in-chief had killed his cows without any authority whatever and without any instructions from him. It is to be presumed that the Executive received similar information, for a telegram to his representative, of the same date, reads: "I knew *you* were right and that *he* was wrong."

During the thirty-three days which elapsed from the time of my appointment until I resigned, fourteen cases of contagious pleuro-pneumonia were killed and buried or delivered to the offal contractor, and I leave it to the profession to imagine, if they can, and the authorities to prove by their labors, at what time in the future New Jersey will be freed from this disease.

Respectfully,

NEW YORK, April 30TH, 1879.

A. A. HOLCOMBE.

PLEURO-PNEUMONIA IN PENNSYLVANIA.

COMMONWEALTH OF PENNSYLVANIA. }
VETERINARY DEPARTMENT, BOARD OF AGRICULTURE. }

Carversville, Pa., May 19, 1879.

EDITOR AMERICAN VETERINARY REVIEW:

It may not prove uninteresting to your readers to have a very brief sketch of the action which the great State of Pennsylvania is taking in regard to that most insidious of all contagious bovine maladies, namely, *Pleuro-Pneumonia Contagiosa*.

Official reports from New York and New Jersey, declaring the prevalence of this disease in those States, led to an investigation in this, which was instituted under the orders of the Secretary of the State Board of Agriculture. On March 15th, in company with two gentlemen from the Market Farmers' Club of Philadelphia, I visited farms in Delaware County, near Upper Darby, and found some well marked and clearly defined cases of contagious pleuro-pneumonia. I at once wrote the particulars of this visit to Thomas J. Edge, Secretary of the State Board of Agriculture, and through this gentleman's efforts a joint resolution passed the House and Senate authorizing the Governor to investigate the cause, nature and extent of this mal-

ady, and report the same without unnecessary delay. Meanwhile this State has passed a law similar to that of New York and New Jersey.

On March 27th, in company with Secretary Edge and members of the House, I visited a herd in York County, and after declaring the disease to be contagious pleuro-pneumonia, the owner kindly allowed us to kill an infected calf for post-mortem purposes. The characteristic lesions were most beautifully developed, and the history of the cases proved that the infection was introduced by some steers which the gentleman had bought from *Baltimore, Md.* The investigation has been carried on up to the present time, and the counties of Philadelphia, Delaware, Montgomery, Bucks, Chester and York are found infected. What *others* there may be, we have not yet ascertained, deeming it unnecessary to carry on the work any farther until the Governor had a report in full and had acted thereon.

In all this work, I desire to express my kind appreciation of the very valuable assistance rendered by J. Westley Gadsden, M.R.-C.V.S., of Philadelphia, as well also as to exonerate him of those malicious charges which certain parties have intimated against him. His work in this matter has been purely *unselfish*, and was prompted only by those motives which look toward the *actual good of the Commonwealth*. From the fact that a body of men, styling themselves the "Penna. College of Veterinary Surgeons," had visited some of the *same* herds which I had pronounced to be infected with contagious pleuro-pneumonia, and *denied* the existence of this disease in a *contagious* form, it was decided to hold a meeting of the Commissioners in Philadelphia, where these conflicting opinions might be heard and weighed. The 16th and 17th of May were designated as the time for this meeting, and it has resulted in proving quite clearly that the position taken by Dr. Gadsden, myself and a few others was correct, and that we *have* contagious pleuro-pneumonia in our midst. I cannot refrain from giving a sample of the intelligence (?) which the "Penna. College of Veterinary Surgeons" displayed at this meeting on Saturday, 17th inst. They *denied* the existence of *contagious* pleuro-pneumonia in this State, and *implied* a very strong doubt

of its ever having been *contagious* in *any* country. In the face of this however, and with but one or two exceptions, when asked the question: "If a cow having pleuro-pneumonia was taken into a healthy herd might she not *so vitiate the air* as to cause other cattle coming in contact with her to take this same disease?" they answered, "YES." *Such inconsistency explains itself.* The long delay in getting to work in this State has been occasioned by the unstable confidence which the Commonwealth reposes in her veterinarians. This is a lamentable fact; yet it remains such, and *will* until our ranks are expunged of those *many forms of quackery* which at present serve only to keep the profession at an ebb which obtains the *contempt* of an intelligent public.

CHAS. B. MICHENER, D.V.S.

CORRESPONDENCE.

EXPLANATION.

Dear Mr. Editor :

The remarks of the editor of the *Veterinary Journal*, England, in your issue of June, 1879, are before me, and require, I suppose, some notice from me. The passage in your REVIEW of April reads in full, "We long to see the day when 'our REVIEW' shall contain contributions worthy of translation and recognition in other countries and among mediciners. Alas! when will the day come. Yet we have no reason to complain, *for about all the matter of any scientific value in the Veterinary Journal, Britain's leading review, is LIKE OUR OWN, 'purloined' from continental writers.*" We are sorry our friend should have taken the word "purloined" in the severe sense which he has. We are fully aware the translations appearing in his journal have been credited to the original writers; but what we do say, and will adhere to is, "taken or borrowed from continental writers"—further change of words or retraction is not my intention to make. As to the strictures of my "borrowed German notions," I never went to Germany to borrow "originality," either in ideas or character—a fact we will leave time to prove—thankful

as I am for the benefits and knowledge derived in that country, neither of which are possible to be obtained in any veterinary school where the English language is spoken. We will not discuss this question further, but wishing all success to those who desire the elevation of veterinary education in this country, I am

Yours, fraternally,

BILLINGS.

Boston, June 12, 1879.

DON'T LIKE THE COMPANY.

SPRINGFIELD, June 17th, 1879.

My Dear Doctor :

I received, this morning, the "Annual Catalogue and Announcement of the Columbia Veterinary College," and I can truly say to you that the appearance of my name as one of the "Councillors" of the above named institution was to me a *first announcement* that anything of the kind was contemplated or had taken place; and I will add that had the *gentlemen* in authority done me the *honor* of asking the use of my name, before using it, I should most certainly have declined to give it them. As the matter now stands, you may be sure that I shall do all within my power to extricate my name from amongst the, to me, very unpalatable surroundings in which I have to-day for the first time seen it, or thought of its being placed.

Yours, very truly,

CHARLES P. LYMAN.

OFFICE FOR THE PREVENTION OF THE SPREAD OF }
 PLEURO-PNEUMONIA AMONG CATTLE. }
 249 Washington St., Jersey City, June 23, 1879. }

Mr. Editor :

In the *Turf, Field and Farm* of June 20th, is an open letter from F. S. Billings, M.V., containing strictures on the profession in the United States unwarranted by the real condition of affairs. Will you allow me the use of your columns to bring a few facts to his notice? Let me tell him that the great need at present in this country is a supply of good practitioners, men with practical knowledge built upon a scientific basis, a need the American

Veterinary College is supplying by turning out from year to year men well qualified to practice their profession with credit to themselves and satisfaction to their clients.

Mr. B. sneers at the mere curers. Is not the first duty of the physician to heal the sick? He speaks of them being able to take no part in sanitary medicine. There are to-day graduates of the A. V. C. giving valuable aid in the suppression of contagious pleuro-pneumonia in this and in New York State. When the Chateau d'Espagne of our friend from Berlin is completed, the private schools are to be wiped out; he will find that the American Veterinary College will never be wiped out or even injured by such an institution as he proposes to found. Our little college is the fruition of patient, hopeful work, of self-denial, of love for the profession. The years of gratuitous service rendered by the professors of our institution, the time given that could have been appropriated to the pecuniary benefit of the giver, the money given as the need arose, the steadfast march on toward the right, all this done without fuss or flourish of trumpets, has had for effect to build the foundation of our alma mater on a rock.

Mr. Billings will never gain a similar stability by trying to lift himself into notoriety by the waist-band of his breeches. He will never elevate himself or his chimerical institution by trying to pull other worthy people down. Let this young man, before he commences to run everything pertaining to veterinary science in the United States, show us of what metal he is made; let him make a reputation as a man and a practitioner, and place himself above the need of informing the public that he is the son of his father and the first American graduate of Berlin in the United States.

Lastly, I can assure him that he need not worry about the time allowed graduates of other colleges, who repair to the "Holy of Holies branch of the original institution in Berlin"—they won't bother him.

There is but one degree toward which the graduate of the A. V. C. looks longingly; it is that of M.D., obtained by hard work from a good school. I am, Mr. Editor,

AN AMUSED GRADUATE OF THE A. V. C.

REVIEW.

“The Four Bovine Scourges,” by Prof. Thomas Walley, F.R.C.V.S., Principal of Dick’s Royal Veterinary College, Edinburgh, is before us. It is a commendable addition to English veterinary medical literature, for which the author deserves the thanks of all friends of the profession desirous of seeing veterinary surgery in English-speaking countries elevated to that position which it should occupy, and which it has already reached in many European countries.

This end can never be accomplished in so long as we consent to be mere followers in the footsteps of foreign scientific investigators. Original work must be prosecuted by ourselves, if we are to rank honorably among the leaders in the race for supremacy: and it is because of the long felt need that our literature in the English language should be unexcelled, as well as for the intrinsic worth of the work itself, that we cordially welcome our esteemed colleague to the ranks of English veterinary authors.

Two of the diseases treated upon, zymotic pleuro-pneumonia and tuberculosis, are so generally prevalent in the eastern part of the United States and are receiving so much attention by the public, that the conclusions deduced by the author from his experience with them will prove of unusual interest to the members of the profession in America, at this time.

Of the other two diseases of which the author has treated, happily the one most rapidly disastrous to cattle, rinderpest, is as yet unknown to this country; while with foot and mouth disease we have had but a short experience, so that while these diseases have not the same practical interest at the moment for us as the former two, they are, nevertheless, treated of in such a manner as to make them interesting to the reader.

The author’s statements, both of facts and opinions, are for the most part succinctly made, and the style is easy and graceful; at the same time, when his opinions differ from those in general acceptance, they are boldly made and supported by conclusions

which a long experience and close observation have supplied.

Following the appendix and postscript will be found a number of colored plates which assist materially to a full comprehension of the various lesions presented by the diseases in question.

In the extract made by the author from the "Report of the Minister of Agriculture for the Dominion of Canada," two statements appear which are so at variance with the truth that we cannot refrain from calling attention to them. On page 210, third paragraph, reported by D. McEachran, Principal of the Montreal Veterinary College, the following, in reference to contagious pleuro-pneumonia, occurs: "Accompanied by Mr. Gadsden I visited New York and communicated with the Principal and Professors of the American Veterinary College, none of whom had any experience of the disease and doubted the correctness of the rumors of its existence," and on page 11 from the same source: "However, as remarked by Prof. Liautard, who up till now was sceptical of its existence, etc." The Review, to which Prof. McEachran is a subscriber, contains ample refutation of the above-quoted statements, and to its pages we refer the reader.

EXCHANGES, ETC., RECEIVED.

HOME EXCHANGES.—Scientific American, Hospital Gazette, Medical Record, Country Gentleman, Turf, Field and Farm, New York Rural, American Agriculturist, Prairie Farmer, Ohio Farmer, Practical Farmer, National Live Stock Journal, Medical and Surgical Reporter.

FOREIGN EXCHANGES.—Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Archives Veterinaires, Journal de Zootechnie, Gazette Medicale, Revue für Thierheilkunde und Thierzucht, La Clinica Veterinaria, Bericht über das Veterinarwesen.

NEWSPAPERS.—Western Sportsman, Vermont Record, New England Farmer, Scotsman (Edinburgh).

PAMPHLETS AND BOOKS.—Four Bovine Scourges, by Prof. Walley; Manual of Scientific Terms, by Stormonth; Ohio Statistics; Report of Board of Agriculture of Connecticut, 1878; Experimentenr Beitray zur Lehre von der Putriden Intoxication und der Septicæmie; Über die Entwicklung der Spermatozoen der Wirbelthiere.

AMERICAN VETERINARY REVIEW,

AUGUST, 1879.

ORIGINAL ARTICLES.

AN EPIDEMIC AMONG HORSES IN FORT RANDALL, NEBRASKA, 1856.

STATISTICAL REPORT ON THE SICKNESS AND MORTALITY IN THE ARMY OF
THE UNITED STATES, 1855 TO 1860, p. 41.*

F. C. MADISON, *communicated by* K. F. HENSINGER.

“In the attempt to enumerate the general epizootics of North America within the last ten years, a few local ones came to my observation, to which a more general interest cannot be attached; among them the following seems to me worthy of communication, because it in part seems to exhibit the obnoxious influences of uncultivated soil, besides casting rather an unfavorable light on the military veterinary system of the U. S. army, which consists in the greater part of cavalry. It is also the only veterinary observation noted in these army reports, for a period of more than twenty years.

Translated from the *Deutsche Zeitschrift für Thiermedizin*, 1877, p. 101.

"The station of the regiments concerned is Fort Randall, in Nebraska, on the right bank of the Missouri, $43^{\circ}01'$ N. lat., $99^{\circ}12'$ W. lon., 1,245 feet above the level of the sea, on the most remote hills that border the endless prairie, opposite the Sioux and other Indians. Adequate to the situation, continually cold in the winter, the lowest point— 26° F. highest 104° ; earliest frost on the 26th September, the last on May 15th, but often much later, even in August; the Missouri frozen over from the beginning of December until March 1st. (It is one of the healthiest stations for human beings).

"A very fatal disease manifested itself among the dragoon horses, which is supposed not to have been described in works on veterinary surgery. Four companies of the Second Dragoons arrived at this port about the 10th of August, 1856, one squadron from Fort Lookout, and one from Big Sioux river, the latter accompanied by a number of new or remount horses. The four companies encamped on the east or lower side of the dry ravine, separating the dragoons and infantry camps. About the 20th of August the disease commenced simultaneously in all four companies, and many horses died, not, however, until after the lapse of weeks and months. The following symptoms were observed: first, that among the remount horses from below was a sort of catarrh, or distemper, with running at the nose, and among all the horses a swelling of the skin of the throat and jaw; also inflammation, swelling, and suppnration of the sheath, tenderness and inflammation of the feet, followed by suppuration at the point where the hoof joins the skin, the hoof, in a measure, detaching itself, and a new one forming in its place. These were also accompanied by a loss of manes and tails. The appetite was uniformly good; but from extreme tenderness of the feet, they were unable to move about in search of food, and it appears that at that time they were entirely dependent upon grazing, there being no forage at the port of issue. Sorrel horses appeared to suffer most, but no color escaped. The private horses of officers shared the fate of public animals. A few mules and Indian ponies were similarly affected. The acclimated suffered equally with the unacclimated. No treatment was effectual, or afforded permanent

relief. Bleeding in the feet was tried, but its effect was merely temporary. Every case of disease originated on the lower side of the dry ravine, above alluded to. After forage was provided for the horses no new cases occurred, and hence it is fair to infer, that a liberal allowance of forage in the beginning might have rendered the disease much less fatal, or have prevented it. Whether the disease was caused by eating any poisonous herbs, or propagated in any manner by contagion, could not be satisfactorily determined, the origin and progress of the malady being something entirely new, even to the Indians or half-breeds of the country. One post-mortem was made of a horse that died late in the winter, but developed nothing important; one lung was diseased, about one-third of the stomach was denuded of its inner lining, and contained botts and with the large intestines inflamed. It is well to remark that we have no veterinary surgeons in our service, and consequently when these noble animals become seriously sick, they almost invariably die.

“If, and undoubtedly with full warrant, the cause of the disease was looked for in the food partaken, why did not the doctor take the pains to examine the pasture ground and search for the poisonous herbs? Probably he would have found ergot, or *vostilaginum*, and the like.

“But if the American Army has no veterinary surgeons, then, certainly, the human physicians must make themselves familiar with the diseases of horses.”

K. F. H.

This is an illustration which gives rise to the question, not only to the honorable, aged investigator, one of the most prominent pioneers of medical authorities of Europe, but also to every person with sentiment, when he pictures to himself the situation of the army horses, how it is that the Government of the United States could have so long neglected to furnish the necessary veterinary assistance for the respective troops, after the losses which originated from the irrational manner of treatment and exposure of animals that are endowed with feeling and consciousness as well as ourselves. Undoubtedly this delay is attributable

to a deficiency in the relative statute; at least I came to this conclusion after a conversation I had with a higher official at the outbreak of the war. At that time, true to my principle, I offered my services to the Union, when the official gave me to understand that farriers were entrusted with the treatment of sick horses; he therefore was not permitted to appoint regular veterinary surgeons. I could, however, if I volunteered to go to the battle-field, find opportunities enough to realize my patriotism as a professional, and probably, through the influence of one or another official, be paid correspondingly. If it were in his power he would long ere this have employed qualified veterinary surgeons, as success depends upon the ability of the horses as well as the troops. He, in addition, remarked that when the war is ended, it would require but little solicitation to dispose of the rough treatment practiced by farriers, and exchange it for the more modern, improved art of healing, based on scientific principles.

I cannot conceal that I felt somewhat offended or ashamed to hear how inferior veterinary science ranked in the military code of this country. Under these circumstances it was not difficult to decide. Remembering the proverb, a bird in the hand is better than ten in the bush, common sense bade me remain with my patrons, who had shown me many gratifying proofs of their appreciation. I also had occasion to observe that relatives, friends and pecuniary influences overbalanced the gravity of professional skill.

In the four camps within my sphere of practice, there were three empirics and one diplomated veterinary surgeon. The self-made practitioners had the preference. The regular veterinary surgeon had charge of the patients in the Covington, Ky., camp. By virtue of his power he one day had twenty-six head of glandered and suspicious glandered horses destroyed, at least two-thirds of which were characterized by the three chief diagnostic symptoms, as I convinced myself, by examining the cadavers superficially, which were lying scattered about a half-acre space of ground; the rest belonged to the category of the suspicious. Notwithstanding the lesions in the lungs were not at that time, as

to-day, universally regarded as a pathognomonic symptom of glanders, it would have been an easy matter to detect the presence of glanders by post-mortem examinations. The consequence of this transaction was that the veterinary surgeon was superseded by one of the same stripe as the other camps were blessed with, and presumably without undergoing such an examination as Capt. Leib put to his horse doctor, which, by permission, reads as follows:

While Captain Leib, U. S. Quartermaster, was very busy shipping some horses and wagons to Cumberland, he was interrupted by one of his clerks, who said: "Captain, here is a list of the medicines the new horse doctor wants."

The Captain took the paper, and glancing over it, exclaimed: "Angle worm oil! Where is the horse doctor?"

"Here I am," answered a diminutive son of Erin from the crowd.

Captain—"Are you the horse doctor who comes so highly recommended?"

Doctor—"Faith I am, sur."

Captain—"Have you had much experience in the treatment of diseases of the horse?"

Doctor—"Yes, sur, a great dale."

Captain—"Where?"

Doctor—"In Ireland; in the ould country."

Captain—"Have you treated horses since you have been in this country?"

Doctor—"Yes, sur, a great dale at Wiston. The farmers always called me, and I gave satisfaction."

Captain—"For what diseases do you use 'angle worm oil?'"

Doctor—"Faith, yer honor, it's mighty good for the horse."

Captain—"Are you familiar with the anatomy of the horse?"

Doctor—"What is it yer sayin'?"

Captain—"Can you tell me the difference between pneumonia and lung fever?"

Doctor—"Don't know, sur. They may be all the same for what I know."

Captain—"How is a horse affected by lung fever?"

Doctor—"I—I—sure, sur—I—like he had the distemper—a running at the nose and month like."

The captain smiled, and sending for his cashier, said :

"Mr. Steel, pay off the new horse doctor ; he won't do."

I do not venture to say that the previous mentioned doctors were any better or worse than Capt. Leib's, but one of them declared that no glandered horse could be found in the whole army ; still, among the condemned ones which were sold about a week or two later at auction in Cincinnati, at least one third were affected with the disease. The speculative purchasers thought that they were dealing with distemper, and expected soon to be master of the disease, and calculated with all confidence upon the multiplication of their investment. Only too often it has happened that one or more of their healthy horses were inoculated with the disease, and died before it came to the turn of the pernicious U. S. C. horse. The loss that the United States suffered is unlimited. If the government would have had the condemned horses examined by a competent veterinary surgeon, and the incurable and suspected destroyed, which any intelligent individual would have done, the country's debt to-day would be considerably less. Moreover the heavy losses horseowners sustained by their stock being infected by these condemned horses, cannot be estimated. Besides we would have obviated the reproach that we unfeelingly exposed the innocent animals to their fate.

It lies in the interest of the agricultural societies, and in the authority of the Society for Prevention of Cruelty to Animals—in fact it is the duty of every individual interested in the general welfare of man and beast, to divert his attention toward the construction of laws that, when applied, will serve to prevent a recurrence of this error. By urging this purpose we would secure protection to both life and property. Who would refuse his assistance ? Surely no one who remembers the stagnation of business at the time the epizootic influenza prevailed among horses.

I am aware, however, that several regiments are provided with veterinary surgeons appointed by the Secretary of War. This highly esteemed officer, Mr. McCrary, present incumbent of this important office, fulfils his duties most scrupulously, but

as there is no possibility for him to ascertain who is qualified, there ought to be a strict law passed, to appoint no others than such as are in possession of a diploma, obtained by going through a theoretical and practical course of instruction in a chartered veterinary institution, granted by a State or the United States, to confer the degree. The honorable Secretary of War would certainly approve of this movement, and cheerfully render his assistance in carrying it through.

J. C. MEYER, SR., V. S.

ANTHRAX IN CATTLE.

By C. B. MICHENER, D. V. S.

Some interesting cases have recently come under my observation, and as they repeat a similar experience of last year, I will lay them both before the readers of the REVIEW. On the morning of June 6th, 1878, I was called to see some young cattle, the property of Watson Fell, Buckingham Township, Bucks Co., Pa., which were dying under very singular circumstances.

Under the attention of a local "cow-doctor," a yearling and a two-year-old heifer had died, and as the "doctor" could not give any clue as to the nature of the disease, its causes, cure or prevention, I was then sent for to see the herd.

Found a beautiful heifer, two years old, and in good condition, presenting the following symptoms: Head held low; ears drooping; pupils dilated; seemingly half asleep, with a slight desire to support the head upon or against some object, as though it was too heavy to hold. The breathing was somewhat accelerated; pulse soft, rapid, and difficult to count; the bowels were inactive, and urine scanty. The symptoms rapidly increased in severity until toward night of the same day, when death closed the scene. An hour or two before death the animal became delirious, would walk, or rather stagger forward against some object which she would press her head against, until forced away.

She finally fell down, struggled and bellowed until she died. The two preceding animals that had died showed similar symptoms, and, like this one, lived only about twenty-four hours from the time that they were noticed to be sick.

The farm where these cattle were kept is a rolling, well-drained red shale, free from noxious weeds or plants, and the water is as fresh and pure as crystal. Everything, in fact, is kept scrupulously clean and neat.

The post-mortem lesions which this case revealed were the same, the owner assured me, as those presented by one of the previously sick animals that the cow-doctor "opened."

The blood-vessels were filled with a semi-coagulated and very dark-colored blood. The liquor sanguinis was of a dark, muddy tint, and discolored the hands but slightly. The serous membranes everywhere were studded with petechiæ, and the ventricles of the brain contained a small amount of serum. The lungs were slightly congested; liver healthy; while the spleen and kidneys were darker than in health. The abomasum presented patches, of different sizes, where the mucous coat was entirely destroyed. The intestines from the stomach to the rectum were denuded of their mucous membrane, and were dotted here and there with small, tubercular-like bodies which, when cut into, exuded pus. (I sent you a specimen of these intestines, and their contents, at the time.)

On June 4th, 1879, I was sent for to see some cattle belonging to Peter Todd, near Lambertville, N. J. A two-year-old steer was found dead in the pasture that morning, and a yearling was showing sick. These animals were apparently well the previous night. The land in this instance is somewhat heavy or clayey, having a thin soil.

This stock had been at pasture, day and night, for some days.

The sick animal was droopy and stupid; slight aqueous discharge from nose and eyes; breathing accelerated; bowels costive; pulse eighty-five, soft and full; temperature 103° Fahrenheit. This animal died about forty-eight hours after first being noticed sick.

I did not have an opportunity to hold a post-mortem exami-

nation in this case. The steer, which was found dead in the field when I saw it, was enormously tympanitic, and a bloody discharge was issuing from the anns and nostrils. Emphysematous swellings were noticed on the neck and shoulder. The blood presented exactly the same lesions as those described in the previous post-mortem. On account of the exceedingly putrid odor given off by the carcass, I made a very hasty and, necessarily, imperfect examination.

Petechiæ were noticed on the pleura, pericardium and peritoneum. The spleen was enlarged to twice its normal size, and was very much congested. On looking at the bowels externally, they presented a dull, heavy, leaden hue, and were semi-transparent. Like the preceding case, the mucous lining was entirely destroyed, and the contents of the intestines were of a yellowish cast, fluid, and contained numerous flakes of mucous membrane. These small, knotty, tubercular points were observed here, also.

In neither of these attacks did I pay any particular attention to treating the sick, but bent all my endeavors toward preventing fresh developments of the disease. The first step taken was, to change the habits of life; if, as in Fell's herd, the cattle had been kept up, and fed dry hay and cob-meal (corn ground on the ear), I ordered them out on grass; if, as in the last mentioned cases, they were at pasture, I had them housed, and fed hay and some grain. Carbolic acid and fresh lime were placed about the stalls and cattle yards in both cases. With these precautionary measures, no more cattle died in either outbreak, and only one was noticed to complain at all. This one, a two-year-old heifer, soon recovered.

These cases are interesting—1st. That the blood lesions simulate very closely, if indeed they are not identical with, those of anthrax. 2d. From the seat and peculiarity, as well as rarity, of the principal local lesion (being very similar to those of catarrhal gastro-enteritis), and 3d. The sudden cessation of the disease when the cattle were placed under different environments and upon an altered diet.

Have I been dealing with true anthrax? And did the free use of lime and carbolic acid, in connection with placing the

animals under different conditions and diet, have *all* to do with cutting short the outbreaks?

These questions will, I trust, elicit the experience and wisdom of other and older members of the profession.

CARVERSVILLE, Pa.

THERMOMETRY IN CONTAGIOUS PLEURO-PNEUMONIA.

BY ED. DELE.

(Continued from page 140.)

I now pass to the thermometrical observations obtained during the month of June, of the current year.

I. The temperature of the only cow remaining at Amors, in the stable where two pleuro-pneumonia cows had died was:

June 29, 1876,	38°2.	(*) Centigrade.
“ 30,	“ 38°0.	
July 25,	“ 38°1,	milks 21 liters a day.
“ 26,	“ 38°3,	“ “ “ “ “
“ 29,	“ 37°5.	
“ 30,	“ 39°0,	less appetite, milks only 14 liters.
“ 31,	“ 39°2.	
Aug. 1,	“ 39°1.	
“ 2,	“ 39°5—16½	liters of milk.
“ 3,	“ 38°5—18	“ “ “
“ 4,	“ 38°8—19½	“ “ “
“ 5,	“ 38°1—19	“ “ “
“ 6,	“ 37°5—19½	“ “ “
“ 7,	“ 40° at 11 o'clock, 38°6 at 4.30 p. m.,	milks 18 liters.
“ 8,	“ 38°7 and 38°5—18	liters.
“ 9,	“ 39°2—milks 19	liters.
“ 10,	“ 38°9—19½	liters.
“ 11,	“ 38°6—	
“ 12,	“ 38°4—20½	liters.
“ 14,	“ 37°8.	
“ 16,	“ 38°0.	
“ 18,	“ 38°0.	

* To convert Centigrade into Fahrenheit, multiply by 9, divide by 5, and add 32; or, multiply by 1.8, and add 32.

Example:— $20^{\circ} \times 1.8 = 36$, $36 + 32 = 68^{\circ} \text{F.}$

$38^{\circ} \times 1.8 = 68.4$, $68.4 + 32 = 100.40$.

II. Cole, milkman at Borgerhout. The 29th of June, day of my only visit, I noticed in a cow pleuro-pneumonia to the last period a temperature of $38^{\circ}5$ —killed the same day. In two others which had stabled with her, it was in one $37^{\circ}5$, in the other $38^{\circ}5$. These animals were healthy. I lost sight of them.

III. Voets, milkman at Borgerhout:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Aug. 11, 1876.	$37^{\circ}5$	$37^{\circ}2$	$39^{\circ}0$	$40^{\circ}0$	$40^{\circ}5$	$38^{\circ}0$
“ 12, “	$38^{\circ}9$	$37^{\circ}8$	$39^{\circ}1$	$40^{\circ}6$	$41^{\circ}1$	$37^{\circ}8$
“ 13, “	$38^{\circ}1$	$38^{\circ}0$	$39^{\circ}5$	$40^{\circ}7$	$40^{\circ}6$	
“ 14, “				$40^{\circ}3$	$40^{\circ}5$	
“ 15, “				(*)	$40^{\circ}2$	
“ 16, “	$37^{\circ}8$	$38^{\circ}0$	$38^{\circ}8$		$40^{\circ}5$	$38^{\circ}5$
“ 17, “	$38^{\circ}4$	$37^{\circ}9$	$39^{\circ}8$		(†)	$38^{\circ}0$
“ 19, “			$38^{\circ}8$			
“ 21, “	$40^{\circ}7$	$37^{\circ}4$	$38^{\circ}4$			$38^{\circ}2$
“ 22, “	$40^{\circ}6$					
“ 23, “	$40^{\circ}1$	$37^{\circ}8$	$38^{\circ}2$			$37^{\circ}7$
“ 24, “	$39^{\circ}3$					
“ 28, “	$38^{\circ}8$	$38^{\circ}5$	$38^{\circ}4$			$38^{\circ}1$
“ 30, “	$39^{\circ}0$	$37^{\circ}9$	$38^{\circ}2$			$38^{\circ}8$
Sept. 2, “	$38^{\circ}4$	$37^{\circ}8$	$37^{\circ}9$			
“ 8, “	$37^{\circ}9$	$37^{\circ}8$	$37^{\circ}7$			
Oct. 1, “			(‡)			$40^{\circ}8$
“ 3, “		$37^{\circ}5$				$40^{\circ}5$
“ 5, “	$37^{\circ}5$	$37^{\circ}7$				(¶)
“ 9, “		$37^{\circ}5$				
“ 18, “	(§)	$38^{\circ}0$ (||)				

NOTES.—No. 5 gives more milk the 12th than the 11th of Aug., (6 liters). No. 5 gives more than 6 liters the 13th of Aug.; No. 4 $\frac{1}{2}$ liter a day. The 14th of Aug., No. 4 gave 1 liter, No. 5 from 6 to 7.

In No. 3, the milk increases the 19th, 21st and 23d of Aug. It diminishes 3 liters the 21st of Aug. in No. 1, which gives on the 24th, $7\frac{1}{2}$ liters, the 26th, 9 liters, the 27th, 11 liters, and 15 liters the following days.

No. 6 is sick since Aug. the 25th.

(*)Killed Aug. 14th. (†)Killed Aug. 17th. (‡)Cured. (||)Healthy, sold and slaughtered. (§)Cured. (¶)Killed Oct. 3d.

IV. Marcellis, milkman at Borgerhout :

Dates.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Aug. 14, 1876.	38 ⁰ 2	38 ⁰ 0	39 ⁵ 5	40 ⁵ 5	40 ⁵ 4
" 16, "			37 ⁹ 9 (*)		
" 17, "	37 ⁹ 9	38 ⁰ 0	40 ⁰ 1		
" 19, "	37 ⁹ 9	38 ⁰ 0	39 ⁵ 5		
" 21, "			41 ⁰ 2		
" 23, "			37 ⁹ 9	(†)	(‡)
" 28, "		40 ⁰ 2	(||)		
" 30, "	38 ⁰ 0 (§)	40 ⁰ 0 (¶)			

NOTES.—No. 4 gives no milk Aug. 14th.

No. 5 gives 6 instead of 10 liters on the 16th. The quantity of milk is less the 10th in No. 3, diminished on the 17th, it returns to 10 liters the 21st.

In No. 2, 5 liters less are given on the 25th of Aug.

V. Lawreys, milkman at Borgerhout :

Dates.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Aug. 21, 1876.	38 ² 2	38 ¹ 1	39 ⁰ 0	37 ⁵ 5	(*)	37 ⁹ 9
" 23, "		38 ⁰ 3	(††)	37 ⁵ 5		37 ⁸ 8
" 28, "	38 ⁶ 6	38 ⁴ 4		37 ⁶ 6		37 ⁵ 5
Sept. 2, "	37 ⁶ 6	38 ⁰ 0		37 ⁵ 5		37 ⁵ 5
" 8, "	37 ⁵ 5	39 ³ 3		37 ⁵ 5		37 ⁸ 8
" 13, "	38 ⁵ 5	(‡‡)		37 ⁵ 5		38 ² 2
" 28, "	40 ⁵ 5			37 ⁵ 5		37 ⁵ 5
" 29, "	40 ⁵ 5					
" 30, "	41 ⁰ 3					
Oct. 3, "	40 ² 2			37 ⁵ 5		37 ⁵ 5
" 5, "	40 ² 2			38 ² 2		37 ⁵ 5
" 7, "	40 ⁰ 0			38 ¹ 1		38 ⁵ 5
" 8, "						38 ² 2
" 9, "	40 ⁸ 8			37 ⁹ 9		37 ⁷ 7
" 10, "	39 ⁸ 8			37 ⁵ 5		38 ⁰ 0
" 11, "	40 ⁶ 6			38 ² 2		38 ⁰ 2
" 12, "	40 ² 2			37 ⁵ 5		38 ¹ 1
" 13, "	41 ⁰ 0			37 ⁸ 8		37 ⁵ 5
" 14, "	40 ⁹ 9			37 ⁸ 8		38 ⁴ 4
" 15, "	39 ⁹ 9			37 ⁵ 5		37 ⁵ 5
" 16, "	40 ⁵ 5			37 ⁵ 5		37 ⁵ 5
" 17, "	40 ⁴ 4			37 ⁴ 4		38 ² 2
" 18, "	40 ⁴ 4			37 ⁰ 0		37 ⁵ 5
" 19, "	(|||)					

(*) I think it noted 39⁷7 instead of 37⁹9. (†) Killed Aug. 14th. (‡) Killed Aug. 16th. (||) Killed Aug. 25th. (§) Killed healthy, Sept. 1st. (¶) Killed Aug. 31st.

(*) Thermometry impossible; she had recovered. (††) Killed. (‡‡) Killed Sept. 26th. (|||) Killed Oct. 18th.

Dates.	No. 4.	No. 6.
Oct. 20, 1876.	37°5	37°5
" 22, "	37°6	37°2
" 24, "	37°7	37°4
" 26, "	37°6	37°1
" 28, "	37°6	37°2
Nov. 5, "	37°0	37°1
" 15, "	37°7	37°2
" 23, "	37°2	37°2

NOTES.—The 13th of Sept., No. 4 gives one liter of milk less than usual.

The 27th of Sept., No. 1 gives 27 liters of milk a day.

The 29th and 30th, No. 1 gives 12 liters; Oct. 6th, 13; 5th 16; 7th, 17; 9th, 16; 10th, 16; 11th, 14; 12th, 13; 13th, 12; 14th, 11½; 15th, 10; 16th, 10; 17th, 10; 18th, 6; 19th is almost dry.

Oct. 5th, No. 4 gives 18 liters; No. 6, 16, and 17 the 7th of October.

VI. Wouters, milkman at Antwerp:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Oct. 19.	38°1	39°8	38°1		38°2	38°2
" 20.		39°6				
" 21.	includ.†	(*)	includ.	includ.	includ.	includ.
" 24.	38°1					37°8
" 28.	37°8		37°2			37°1
Nov. 4.	37°5		37°5			37°8
" 11.	37°0					37°0
" 18.	31°1					
" 23.	Thermometry impossible in all.					

NOTES.—The 24th of Oct., No. 1, 5 and 6 give each 15 liters; No. 4, 10; No. 3, 6.

Nov. 11th, No. 1 gives 5 liters less—I gave her a cathartic.

Nov. 15th, No. 1 is cured.

Nov. 18th, No. 1 gives 7 liters, and keeps increasing gradually.

VII. Verstraelen, milkman, at Borgerhout:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.
Nov. 2.	37°0	38°3			37°(**)	38°3				40°0
" 3.		38°1				37°6				(††)
" 4.		38°2			37°6	38°2				
" 18.		37°5			37°5	37°5				
" 23.		37°8			37°0	37°5				

(*) Killed Oct. 20th. † Inoculated.

(**) Killed Oct. 20th. (††) Killed Nov. 2d.

NOTES.—Nov. 2d, No. 3 and 6 are not as well as No. 1.

Nov. 3d, No. 3 is dry in the evening.

Nov. 4th, she gives about 9 liters in the day.

Nov. 18th, No. 5 is well.

VIII. Van de Zande, cattle dealer at Borgerhout. In one of his cows (No. 10) the temperature on the 3d of Nov., was $38^{\circ}9$. She gave on the 2d, 4 instead of 10 liters of milk. Symptoms of indigestion—sold. She is killed, and at post-mortem shows a beginning of hepatization. A dog ate her lungs and I could not inoculate the other cows.

During the absence of Van de Zande, a new cow was placed in the stable, between No. 1 and No. 2. At my first visits, the cows were placed as follows:

	No. 9.	No. 8.	No. 7.	No. 6.	No. 5.	No. 4.	No. 3.	No. 2.	No. 1.
Nov. 11.	$38^{\circ}0$	$39^{\circ}0$	$37^{\circ}8$	$37^{\circ}5$	$38^{\circ}0$	$38^{\circ}2$	$39^{\circ}2$	$37^{\circ}5$	$37^{\circ}0$
" 14.							$40^{\circ}5$		
" 15.							$39^{\circ}5$		
" 18.	$37^{\circ}5$	$37^{\circ}5$	$37^{\circ}5$	$37^{\circ}6$	$37^{\circ}4$	$38^{\circ}3$	$38^{\circ}3$	$39^{\circ}2$	$38^{\circ}4$
" 20.						$40^{\circ}0$			
" 21.	$37^{\circ}8$		$38^{\circ}0$	$37^{\circ}0$	$38^{\circ}3$	killed.	$38^{\circ}0$	$38^{\circ}5$	$37^{\circ}7$
" 23.	$38^{\circ}5$	$37^{\circ}7$	$38^{\circ}2$	$37^{\circ}2$	$37^{\circ}5$		$40^{\circ}6$	$38^{\circ}5$	$38^{\circ}0$

Nov. 11th, No. 8 had a little œdema of the mammæ; she has given milk from one teat only for a long time.

No. 3 is lame on the left hind leg, gives 27 liters.

The 18th of Nov., No. 8 is healthy.

The 17th, No. 4 is isolated, as she does not feed; the 18th she eats and milks 10 liters instead of 15—18 the days before.

The 20th, respiration 42, pulse 96, palpitation of the heart, chills, no grunt, no dullness on percussion. She is sold and slaughtered. On post-mortem is found hepatization to the second degree. The virus is used to inoculate No. 1, 2, 5, 7 and 9. No. 3 has calved during the night. No. 6 and 8 are fat.

The 23d of Nov., No. 3 has a temperature of $40^{\circ}6$. She milks as before, 27 liters.

IX. Van Hout at Borgerhout:

	No. 1.	No. 2.
Nov. 13.	$39^{\circ}9$	$41^{\circ}2$ Killed.
" 14.	$40^{\circ}5$ Killed.	

No. 1 is sick since three days— $7\frac{1}{2}$ liters of milk instead of 23 on the 13th.

No. 2 is diseased since ten days—2 instead of 15 liters. She gives $6\frac{1}{2}$ on the 14th.

X. Berkman, milkman at Berchem:

Dates	No. 1.	No. 2.	No. 3.	No. 4.	No. 3.	No. 2.	No. 1.
Nov. 16.	39°3	died	37°8	38°5	killed	37°6	38°0
" 18.	37°4		38°0	38°1		37°0	38°4
" 23.	37°1		38°5	37°5		38°0	37°3

No. 1 has been sick, probably with pleuro-pneumonia, six weeks ago. She then gave no milk, now she milks 16 liters.

XI. Mortens, milkman, at Borgerhout:

A cow—temperature 39° the 20th of November. No pleuro-pneumonic symptoms. I advised to sell her. On the 23d I saw her again. On account of her ugliness I could not take her temperature. She gave 5 liters instead of 3 that she milked on the 20th. She probably had phthisis.

XII. Smith, milkman, at Borgerhout:

A cow, single in a stable, temperature 38°5. No symptoms of pleuro-pneumonia on the 20th of November. I advised to send her to the slaughter-house. She is killed the 23d. To my great surprise her lungs exhibited the lesions of pleuro-pneumonia.

XIII. Noenineky, at Berchem. August 2nd, 1876, a pneumonic cow, temperature 41°. Killed the next day; had previously been with a pleuro-pneumonic cow.

XIV. Delaet, at Anvers, August 3d, a cow which has not delivered is sick, and has a temperature of 37°7.

XV. Mortens, at Borgerhout, August 8th, non-delivered cow, temperature 38°2.

As can be seen, my observations are quite numerous. Let us see now the significance of the figures obtained on animals suffering with pleuro-pneumonia, and on those affected with other diseases.

1st. In pleuro-pneumonic cows I have noticed:

41°	in	No. 1,	13th	observation,
41°1	"	"	5,	3d
41°2	"	"	3,	4th
41°2	"	"	2,	9th
41°3	"	"	1,	5th

In these five animals the diagnosis could be made without the thermometer, as the disease was at the *period of acme*. All were killed.

I observed the following temperatures :

1st. $38^{\circ}5$ in cow No. 1, 2nd observation, killed by my order.

2nd. $38^{\circ}3$, raised to 40° in two days by cow No. 4, 8th observation, slaughtered. I did not make out pleuro-pneumonia, the 18th and 19th when the temperature was $38^{\circ}3$, but was suspected on the 20th, the thermometer registering 40° .

3d. $38^{\circ}8$ August 30th, thermometer raised to $40^{\circ}8$ Oct. 1st, (No. 6, 3d observation). Killed by my order.

4th. $38^{\circ}9$ August 12th, temperature raised to $40^{\circ}7$ and down again to $38^{\circ}9$ (No. 1, 3d observation). Animal got well.

5th. $38^{\circ}9$ the 3d of Nov. (No. 10, 8th observation). This cow, which had been sick but one day, and in which I did not suspect pleuro-pneumonia, was killed, and exhibited hepatization of her lungs.

6th. $39^{\circ}3$ the 16th of Nov. (No. 1, 10th observation), was visited only when in convalescence.

7th. 39° the 4th of Aug. (No. 3, 5th observation). Disease far advanced. Animal killed by order.

8th. $39^{\circ}5$ the 20th of Nov. (12th observation). Slaughtered the 23d.

9th. $39^{\circ}5$ the 14th of August ; later rising to $41^{\circ}2$. Killed by order.

10th. $39^{\circ}8$ the 19th of October (No. 2, 6th observation). The temperature came down to $39^{\circ}6$. Destroyed by order.

Consequently, the periods of *invasion* and of *increase* are accompanied with a rise in temperature to 41° .

To define exactly these two periods, is difficult. It seems to be 40° for the period of invasion and 41° for that of increase.

The period of *invasion* is not easy to recognize, the symptoms observed can belong to other diseases, especially to indigestion. The period of *invasion* was observed at post-mortem in No. 10, 8th observation, and No. 1, 12th observation, and also by the continuation of the disease in No. 4, 8th observation. Killed the 20th.

The period of increase was observed in cow No. 6, 3d observation. In her, the temperature, which on the 30th of August, was $38^{\circ}8$, rose to $40^{\circ}8$ the 1st of October. In No. 1, 3d observation, the temperature was $38^{\circ}9$ the 12th of August, on the 21st it marked, after some oscillations, $40^{\circ}7$; in No. 3, 4th observation, the thermometer on the 14th of August, registered $39^{\circ}5$, then $40^{\circ}1$ the 17th, and $41^{\circ}2$ the 21st. In No. 4, 8th observation, for two days the temperature was $38^{\circ}3$ and 40° .

In No. 1, 2nd observation, the instrument registered $38^{\circ}5$. Growing weak. She was killed the 29th of June.

No. 2, 6th observation, temperature 39° . Killed the 21st of August.

No. 2, 10th observation, temperature $39^{\circ}3$. In way of recovery. Two days later she registered $37^{\circ}4$.

No. 1, 3d observation, the temperature, on the 21st of August, from $40^{\circ}7$ began to go down, in consequence of convalescence. On September the 8th, it is but $37^{\circ}0$.

No. 3, 3d observation, the temperature is 39° on the 11th of August, $39^{\circ}5$ the 13th, then comes down to $37^{\circ}7$ on the 8th of September. Cow cured.

What is the meaning of that diminution of the temperature after the marked increase? Either a return to health (No. 2, 10th observation, No. 1, 3d and No. 3, 3d), or approaching death (No. 1, 2nd observation, No. 3, 6th). It was then the period of *decline*.

From the above, let us conclude that the *invasion* of pleuropneumonia, not easy to recognize, is accompanied with an increase of temperature. This continues during the period of *increase*, and is at its maximum at the period of *acme*. From that it diminishes and indicates the period of *decline* towards recovery, (slow diminution) or towards death (probably more rapid, I say probably, not having had the opportunity to confirm it by leaving the animals die).

But there is a period preceding that of *invasion*; it is the *incubative* stage. It cannot be recognized or suspected by the use of the thermometer. Here is the proof: Cow No. 4, 8th observation, had a temperature of $38^{\circ}3$ the 18th of November; she was

isolated, as being indisposed. The 20th the temperature was 40° . Killed that day. I found pulmonary hepatization.

Cow No. 10, 8th observation, which had been sick but twenty-four hours, presented, the day she was killed, a temperature of $38^{\circ}9$. The disease had not been made out during her life.

Amongst bovine animals, affected with other diseases than pleuro-pneumonia, I have observed cases where the temperature remained unchanged (cow No. 1, 14th and 15th observation). These cows were sick from not cleaning after delivery.

Cows No. 3, 5 and 6, especially No. 5, 7th observation, ate less and gave less milk. Their food was sour. They recovered after a few days. Their temperature remained unchanged. But I have observed some cases in which the thermometer had registered high in a marked manner. No. 8, 8th observation, temperature 39° the 11th of November, and which had an œdema of the mamæ, recovered quickly, and the 18th of November, had a temperature of $37^{\circ}5$. No. 3, 8th observation, temperature $39^{\circ}2$ the 11th of November, $40^{\circ}5$ the 14th, $39^{\circ}5$ the 15th, $38^{\circ}3$ the 18th, had only 38° the 21st. This cow had just calved, and gave 27 liters of milk.

Another, which was in a stable where the pleuro-pneumonic virus had been thrown off by two sick animals, became sick with indigestion by too rich feeding. Her temperature rose to 39° the 30th of July, to $39^{\circ}5$ the 2nd of August, to come down the following days, and on the 7th it reached 40° . She got well a few days later.

Let us then conclude that the increase of temperature cannot establish a distinction between pleuro-pneumonia and other inflammatory diseases. It seems, however, that it rises more in pleuro-pneumonia. One then may, at the most, by the increase of temperature in a cow which has been exposed to the pneumonic virus, suspect or fear the invasion of the peri-pneumonia.

I will add that, generally, the veterinarian is called only when the disease has reached a period of increase, or of acme; it is for that reason that I always noted a temperature of 39° and 40° .

Sometimes the veterinary surgeon is called at the last period, when the beast is about dying, and almost never when it is about

recovering. I exceptionally have noted then the temperature (No. 1, 10th observation). Very seldom is he called in the *invasion* stage, which is not surprising, as the disease is not recognized. Nevertheless, I was called twice in that period (8th observation); the first time, November the 3d, for a cow, No. 10, which was sick since the day before, and whose temperature was 38° ; the second time the 18th of November, for No. 4, sick since the 17th, and presenting a temperature of $38^{\circ}3$. Lastly, I visited a cow (12th observation), with a temperature of $39^{\circ}5$ and in which the disease was not made out till she was slaughtered the 23d.

(*To be concluded next number.*)

EDITORIAL.

ERROR OR MISUNDERSTANDING.

When, through the kindness of Prof. Walley, "*The Four Bovine Scourges*" came to us and was placed in our hands for review, it was with pleasure that we fulfilled the agreeable task, calling the attention of our readers to that most excellent work. But as we did so it became our duty to take notice of a part of the book, which was the report of Prof. McEachran to the Canadian government relating to the existence of pleuro-pneumonia in the United States. Scarcely had the REVIEW reached its subscribers when letters came from all directions to different gentlemen, some from Canada, some from Pennsylvania, and before we had time to think what all this trouble could mean, harassed by questions from here and there, came the two letters from Prof. McEachran and Mr. Gadsden addressed to the REVIEW, with special desire to have them printed at once.

Well, now, the REVIEW is a modest little periodical, and she tries to do her work in a quiet way, and it is unnecessary to try to give her a bad name or an *unenviable reputation for ungentelemanly attacks*, for she has as yet been, and we hope will remain, innocent of such a charge.

We have already replied to the letters in the pages of the RE-

VIEW, and now we will ask the attention of our readers a moment for further explanation. The extracts in the review of the report of Prof. McEachran which gave rise to the storm of attack against the enviable reputation of the REVIEW, and charges of *gross misrepresentation* towards us are these: 1.—“Accompanied by Mr. Gadsden, I visited New York and communicated with the Principal and Professors of the American Veterinary College, *none of whom had any experience of the disease, and doubted the correctness of the rumors of its existence.*” It is true that we, personally, had not on hand a case of pleuro-pneumonia to show at a moment’s notice; these things are not always ready to order; but is that a proof that we had no experience of the disease, or that we doubted its existence? In our professional relations with veterinarians from New York State, in our meetings of veterinary societies, in our private inspection of slaughter houses in New York City, we have often received self-evident proofs of the disease; and it is difficult to understand that under such circumstances *we have had no experience of the disease, or that we doubted its existence.*

The second extract is that “Prof. Liantard, who up till now was sceptical of its existence,” etc. We must acknowledge that we could not but be sceptical as to the *extent* of the disease in Blissville. We did not expect to find it so serious where it existed, and we believe that everybody present there, even Prof. McEachran, must have been surprised; but we leave to our readers the question how could we have been sceptical as to the existence of the disease, when, as we have already said, we had reports now and then from veterinarians, our friends and state colleagues, when the subject was now and again discussed at our meetings, and when we had seen post mortem lesions, which *our past experience* had made as familiar to us as those of contagious pleuro-pneumonia?

When we printed the extracts which have so seriously aroused the feelings of our friend, Prof. McEachran, it was not with the intention of taking from him the credit he deserves for the work he has so ably and faithfully performed. To him we know, as an officer of the Canadian government, is due the honor of forcing

the American government to acknowledge that the notices veterinarians in this land in general, and the little REVIEW in particular, had so repeatedly given were correct, and that these contagious affections did exist in different States; but we could not refrain from mentioning the extracts already referred to, not for our personal satisfaction, but to correct the wrong impression which said extracts must have carried, and as we were told did carry, to others less posted with our constant endeavors to elevate the veterinary profession in the United States.

PLEURO-PNEUMONIA IN PENNSYLVANIA.

Amongst the good news from Pennsylvania, the following is received through our exchanges :

“ Dr. Gadsden, V. S., has given the information that the proper authorities are at work stamping out contagious pleuro-pneumonia in Pennsylvania, and are paying the farmers for the stock killed. Any farmers believing that the disease exists on their farms, and desiring to get rid of it, should address the Board of Agriculture at Harrisburg, &c., &c.”

We are not informed of the veterinary authorities who will belong to the pleuro-pneumonia commission, but certainly our most esteemed friend and colleague, Dr. Gadsden, might fill a position there to which he is justly entitled..

REPORTS OF CASES.

A CASE OF DYSTOCIA.

By F. S. BILLINGS, V. M.

On the 28th of June, early in the morning, we were suddenly called to visit a mare, in the difficulties of labor. The mare was an old favorite with its owner, who was holding her for the sole purpose of keeping her memory green by means of her offspring.

The pains began in this mare at about seven o'clock of the previous evening. The watchman, who, by the way, knew

nothing of horses, paid little attention to her. He observed, however, that at about eleven o'clock in the night, the mare was quiet and eating. About twelve the troubles of the mare again began, increasing very much in severity, the unfortunate mare throwing herself about in various directions. The watchman, not knowing what to do, called up the numerous drivers of the establishment for consultation. The result was as usual; the experienced "cow leech" of the neighborhood was sent for. No relief being afforded, it was decided to call the owner at about six o'clock in the morning. The gentleman came immediately for us, and, in company with our friend Mr. Gerth, we at once proceeded to the scene of battle. We found the mare down, much exhausted, but occasionally rising, throwing herself from one side to the other of the box, and then upon the floor. Her struggles were so violent that we found it necessary to administer chloroform. From the vulva protruded the fore-feet of the foal. Upon following them up along the vagina, one came in contact with the body of the foal, the head not being directly felt, nor was it in a reverted position. Upon slowly withdrawing the hand, the curvatures of the inferior-maxillary were distinctly felt above the wall of the vagina. We then proceeded to make an examination *per rectum*, and found the anterior part of the head of the foal protruding into that intestine. The struggles of the mare having been moderated by the chloroform, it was no difficult task to push the foal forward, by means of which it was possible to dip the nasal extremity into the vagina. The foal was dead. The birth was artificially completed in a few moments. On examination of the recto-vaginal ruptures *post-parvum*, the cavity was found to be the size of a man's hand, but the edges were in a more or less intimate degree of opposition. The condition of the patient justified the most unfavorable prognosis. Thoroughly exhausted, with ice-cold extremities and a weak fluttering pulse, she lay upon the straw of her stall, even after the effects of the chloroform had apparently passed away. Notwithstanding the most exact and continued applications of anti-pyretic and antiseptic, in unison with appropriate stimulant treatment, she passed away in about twenty hours from time of delivery. Our sole reason for report-

ing this case is to add one more to the already extended list of fatal results following the interference of *raw empirics*.

F. S. B.

Boston, July 8th, 1879.

AN INTERESTING CASE.

By F. S. BILLINGS, V. M.

Death of a horse from non-oxidization of the blood, by reason of heat and over-driving.

On Friday, July 5th, in company with Mr. J. Gerth, Jr., a student of the American Veterinary College of New York, we paid a visit to the Abattoir, and on our return over the well-known "mile ground" of Brighton, we had a friendly brush with parties unknown. Our own horse, being considerably the faster of the two, the party driving the other began the usual tactics of whipping and running his horse, in order to get by us. We ourselves pulled our horse to a walk, and continued at this pace for about a mile. On coming within sight of the so-called "Run," our attention was called by Mr. Gerth to the horse of our unknown friend, which had fallen to the ground, and was in the last struggles of life. The owner, deeply grieved, kindly placed the cadaver at our disposal for necroscopical purposes. We made the necroscopy at Ward's Wharf at six o'clock, P. M., Dr. Stickney, of Boston, honoring us with his presence. Mr. Gerth kindly removed the organs for us. The laryngeal and pharyngeal regions were in a highly congested condition, the mucosæ being dotted with numerous ecchymoses. This condition of the respiratory mucosa extended along the trachea into the bronchial ramifications of the lungs. The mucosa itself was swollen, and on cross-section displayed a high œdematous condition. The glottis presented the well-known phenomena of "spasmus-glottidis." No erosions or ulcerations, or any evidences of mechanical injury were present. Upon making a cross-section of the lung, the same was black-red in color; a thick, blackish-red fluid oozed from the cut vessels over the sectioned surface. Upon scraping away the same with the scalpel, the parenchyma appeared dry, thereby de-

monstrating that capillary hemorrhage into the lumina of the alveola had not taken place. Pieces of the lung thrown into water floated upon its surface. The cavities of the heart were nearly empty, no coagulæ being found in either of them. The peculiar contracted condition of the larynx under such circumstances has been, we think, too often looked upon as *causus morbi*. In truth, the restricted circulation in the lung, the non-oxidization of the blood, with the consequent accumulation of $C.O_2$, gives rise to irritation of the nervous centre controlling the larynx. This, with the swollen condition of the laryngeal mucosæ, presents ground of obstruction to the entrance of oxygenated air into the alveolæ of the lungs, the lumina of which are already greatly diminished by the over-distended capillaries. In such cases the real *causus morbi* is the accumulated $C. O_2$.

The day on which the accident occurred was painfully hot and sultry. The horse in question had only recently come to our city from Vermont, and was in no condition to demonstrate his natural speed for any distance under such untoward circumstances. The excitement into which the horse was thrown, not only from his natural desire to outspeed his competitor, as well as the not too-light application of the whip, and the strong pulling to which he was subjected, all played a part in causing his death.

F. S. B.

Boston, July 8th, 1879.

EXTRACTS FROM FOREIGN JOURNALS.

TRICHINA IN AN HIPPOPOTAMUS.

On the 10th of May, died at the Zoological Garden of Marseilles, a young hippopotamus, two years old. Since her arrival the animal has been ailing, her skin being covered with an eruption of furuncles. During the four months she was at the garden she received the best of care, but finally died. At the post mortem, a minute observation of the muscles of the back revealed the

presence of numerous trichinous cysts in large numbers, containing the trichina spiralis, cysts much larger than those found in the pig or in man.—*Gazette Medicale*.

REMOVAL OF THE INTERMAXILLARY GANGLIONS AS MEANS OF DIAGNOSIS OF GLANDERS.

Messrs. Manry and Labat, to ascertain a doubtful diagnosis of glanders, examined the intermaxillary ganglions, and found in their mass two tubercles in way of softening, and three in the state of yellowish granulation. From these lesions they concluded the existence of glanders. "The post mortem of the animal when destroyed revealed no lesions in the nasal cavities, the sinuses, the larynx or the trachea. In the lungs were found a dozen tubercles of different periods, but generally old; also some marks of pleuritic glanders."

In conclusion M. Labat states that in like cases, the examination of the ganglions after removal is an easy mode to confirm the diagnosis of a suspected case; as in the horse, the tubercle signifies neither tuberculous nor syphilis, but glanders or farcy."—*Revue Veterinaire de Toulouse*.

ON THE DISINFECTING ACTION OF CHLORINE—INOCULATION OF A DONKEY WITH THE VIRUS OF GLANDERS, TREATED BY THE GAS—COUNTER-PROOF WITH THE GLANDERS OF THE DOG.

M. PENCH, of Toulouse.

Has chlorine gas the property of destroying the virus and its power of contagion?

As far as it concerns the virus of glanders, Renault says "No;" Gerlach, "Yes." Mr. Pench, from late observations has a tendency to be of Gerlach's opinion.

Virus of glanders was placed in a cup hanging in the middle of glass globes filled with chlorine gas. After fifteen minutes the virus is inoculated in a donkey. At the same time some *undisinfected* virus is inoculated in a dog. In the donkey the wounds of inoculation healed rapidly, and no bad symptoms manifest them-

selves. In the dog, the wounds became inflamed and the sub-glossal ganglion swollen.

Twenty days later the donkey was inoculated with the pus taken from the wounds of the dog. The symptoms of glanders made their appearance. After death all the lesions of glanders are found.

SALICYLATE OF SODA IN PNEUMONIA OF THE HORSE.

Mr. Inarbol recommends the use of salicylate of soda in the treatment of pneumonia of the horse, \mathfrak{v} (five drachms) a day, in two doses. The result surpassed his anticipation. From the first day of the treatment, an improvement was noted in the patient, his respiration became easier and slower, his pulse better and fuller, the temperature lowered and an abundant diuresis took place. This improvement continued till the recovery of the animal was completed.

COOLING TREATMENT IN PNEUMONIA.

Amongst several cases of pneumonia treated by cold external applications, Prof. Zangger of Zurich, presents two principle subjects. No. 1 is a fat and strong horse, admitted to the Hospital of the Veterinary School, with 37 respirations, 80 pulsations, a temperature of $40^{\circ}7\text{C}$. Damp and cold applications are placed round the trunk, covered with dry blankets. Thirty-six hours after, the respiration is down to 18, pulsations 45, temperature $38^{\circ}4\text{C}$. No. 2, a young and robust horse, is admitted, with all the symptoms of pneumonia. 36 respirations, 68 pulsations, temperature $41^{\circ}9\text{C}$. After damp and cold application, all the symptoms diminished. A few hours after there are but 23 respirations, 61 pulsations, and the temperature is down $38^{\circ}4\text{C}$. This improvement kept on and the animal recovered.

TRICHINA IN SYRIA AND EGYPT.

A circular from the Minister of the Interior in Italy, dated February, 1879, gives official information of the existence of trichi a in swine from Syria and Egypt. A decree of the same day prevents the importation into Italy of living pigs or of their carcasses.—*Revue d' Hygiene*.

STATISTICS OF HYDROPHOBIA IN THE DEPARTMENT OF SEINE, FRANCE.

From the extract of Mr. C. Leblanc to the department of police in Paris, the number of cases of hydrophobia for 1878 was no less than 511, viz : 440 dogs, 68 sluts and 3 cats.

Amongst those 390 had the raving type, and 121 had the dumb rabies ; 103 persons were bitten, viz : 67 adults and 36 children ; the mortality being 30, or 1 out of about 3. 454 dogs and 24 cats were bitten. Of the dogs, 342 were killed, 112 were lost. All the cats were destroyed.—*Revue d' Hygiene*.

VIRUS OF HORSE POX FOR VACCINATION.

Dr. Pingaud has inoculated seven soldiers with the liquid of the vesicles developed upon the buccal mucous membrane of horses suffering with horse pox. Upon six of them the vaccination took well. Out of these virus was used to inoculate sixty-four men. On those the result proved magnificent in 40 men (64 per 100), the result was positive. Cows were then inoculated with the virus of the horse pox, and were used afterwards for general vaccination of the whole garrison. But what proves that the equine virus becomes weak in passing by the cow, is that the liquid of this cow pox inoculated gave only a success lower than in the former operation. Twenty-eight per one hundred instead of sixty-four proved successful.—*Bulletin Academie de Medecine*.

REGULATING THE STAMPING OUT OF PLEURO-PNEUMONIA IN NEW JERSEY.

STATE OF NEW JERSEY.

EXECUTIVE DEPARTMENT, }
Trenton, June 26, 1879. }

Gen. William H. Sterling :

SIR:—It has been made known to me that the infectious and contagious disease among neat cattle, called Pleuro-Pneumonia, has been brought into and exists in various counties of this State. You are therefore directed, as my assistant, charged with enforcing the law for the prevention of the spread of the disease, to prohibit the movement of cattle within the State wherever and whenever you may deem it necessary, except on permits from yourself after skilled examination under your direction.

You are also directed to compel all owners of cattle, their agents, employees or servants, and all veterinary surgeons, to report forthwith to you all cases of disease by them suspected to be contagious. When any such notification is received, or when from any source you receive information inducing you to suspect the existence of the aforesaid disease among any cattle in the State, you are directed to have the cases examined, and you are hereby empowered, when you deem it necessary, to cause all such animals as are found to be infected with said disease to be killed and buried with slashed hides.

You are directed, further, to quarantine all cattle which have been exposed to the infection of said disease, or located in an infected place; but you may, in your discretion, permit such animals to be slaughtered on the premises and the carcasses to be disposed of as meat, if, upon examination, they shall be found fit for such use. You will cause all buildings, yards and premises in which said disease exists, or has existed, to be thoroughly disinfected.

You are further directed, whenever the slaughter of diseased

or infected animals is found necessary, to determine the value of the animal or animals so slaughtered at the time of slaughter, taking account of their condition and circumstances, and to furnish the owner or owners with vouchers necessary to enable them to draw the amount from the Treasurer.

Whenever any owner of such cattle, or his agent or servant, has wilfully or knowingly withheld, or allowed to be withheld, notice of the existence of disease upon his premises, or among his cattle, or has interposed obstacles to the examination of suspected cases, you will not make such voucher. So, also, in all cases where the owner of infected cattle, or those suspected to be infected, has wilfully failed to observe and maintain a quarantine regularly imposed under these instructions and the law to which they refer. You will in such cases make no voucher for the value of the cattle of such owner, should you find it necessary to cause them to be slaughtered.

You are further directed to take such measures as you deem necessary to disinfect all cars, or vehicles, or movable articles by which contagion is liable to be transmitted. You are also to take such measures as will secure a registry of cattle introduced into any premises in which disease has existed, and to keep such cattle under supervision for the period of three months after the removal of the last diseased animal and the subsequent disinfection of such premises.

You are also authorized and directed to take such measures as in your judgment may be necessary to prevent the indiscriminate pasturing of cattle on public commons in localities where the aforesaid disease is known or suspected to exist.

I have to request that you will use your best endeavors to impress upon the owners of cattle, whether infected or not, that these instructions and the law known as the Pleuro-Pneumonia law, are in their interest, as well as that of the State in general, and that their hearty co-operation is asked and desired in carrying out the necessary measures.

It is my wish that, while the provisions of the law are made most effective and its purposes promptly and fully accomplished, this should be done in such a manner as to cause the least possible

inconvenience and injury to all concerned and a minimum of expenditures by the State.

In this spirit I further advert to certain precautions which are absolutely necessary to insure the complete and prompt eradication of the disease among cattle in the State, and which it may be difficult to enforce without the cheerful and intelligent assistance of the owners of cattle and of all good citizens.

Among them are the following :

No persons who are not employed in the care of the cattle kept there should be allowed to enter infected premises ;

No animal, or even fowls, should be allowed to enter such premises, for the reason that, even when not liable to the infection themselves, they may carry its seeds to neat cattle ;

The clothing of all persons engaged in the care, slaughter or rendering of diseased or exposed cattle, or in any employment which brings them in contact with such diseased animal, should be disinfected before they leave the premises where such animals are ;

Persons employed in the care of infected animals should not enter stables, yards or premises where sound cattle are kept without first thoroughly disinfecting their clothing ;

Manure, forage and litter upon infected premises should only be removed therefrom in such a manner and be so disposed of as to prevent the spread of infection.

You are instructed not only to take such measures as in your judgment will secure the observance of these and all similar necessary precautions, but you will also use every effort to convince those concerned that it is their own best interest to secure such observance by all means in their power.

Whenever in your judgment it becomes necessary, you are authorized, without further reference to me, to call upon the Sheriffs and Deputy Sheriffs of the townships concerned to carry out and enforce the provisions of the law and of the instructions received from me.

Very respectfully your obt. svt.,

GEORGE B. McCLELLAN,
Governor.

BIBLIOGRAPHY.

INOCULATION PREVENTIVE DE LA PLEURO-PNEUMONIE AU POINT
DE VUE PRATIQUE.

Par ED. DELE, Medecin Veterinaire.

This little brochure is the resume of a number of close observations made by M. Ed. Dele, and of the conclusions to which he has arrived, viz: A strong advocacy of inoculation for the prophylaxy of contagious pleuro-pneumonia. After giving a full description, with tables, of the different experiments and observations he made, and also a few remarks about the process of inoculation, the choice of the virus, and the local and general effects obtained, Mr. Ed. Dele concludes as follows :

Pleuro-pneumonia has *generally appeared* in a herd in *one cow only*, seldom upon two at a time, and in this case together. About *three* weeks after one, two or three new cases have appeared, one after the other, and then other cases show themselves at different intervals.

The period of incubation has then been, in the minimum, about three weeks.

When two cases made their appearance a few days apart, we have inferred that a case anterior, of about three weeks, had already existed.

When pleuro-pneumonia makes its appearance in a herd, the first case is never recognized at first, that is, in the first period. When other cases are present, the previous existence of known cases may engender suspicion of existence of the disease.

Pleuro-pneumonia is introduced into a stable by contagion. Spontaneous development, if it exists, is the exception.

Pleuro-pneumonia is always contagious, though some bovine are refractory to the virus.

Pleuro-pneumonia, when propagation has not been prevented, is *constantly* spreading from stable to stable, where they communi-

cate or open on a common yard, and has almost *always* spread when stables are separated by a wall.

In *infected* stables where *inoculation of healthy animals has not been done*, never did the disease stop after one single victim. 83 per cent. became pleuro-pneumonic.

In *infected* stables where healthy animals were *inoculated*, frequently the disease stopped *entirely*. When it continued, the mortality was much reduced.

Inoculation has been followed by valuable preventive effects only when practiced from the time of the first case of sickness seen in the stable.

The virus produced by the first pleuro-pneumonic cow is absorbed first by one, two, seldom three others, which, in their turn, produce and exhale the virus, which gives rise to a new series of victims. The effects of the virus are visibly manifested after about three weeks; there is then pulmonary hepatization. In practising inoculation, it prevents hepatization, in a manner we cannot explain. Inoculation done during the latent period, or when the disease manifests itself externally, has not stopped the disease.

In *non-infected* stables, we *never* introduced the disease by inoculation.

Inoculation *can* be performed at all times.

The *most ordinary* consequences of inoculation are :

(a), Limited swelling of the tail, round the wound, which gives rise, often a long time after, to purulent discharge; (b), frequently general functional disturbances.

Sometimes the swelling did not appear, even when the inoculation was repeated. Bovine, under these conditions, are refractory.

Exceptionally, we have had an *excessive* swelling, extending above the base of the tail. This always subsided by surgical and medical attention. *Not one animal has succumbed to it.*

Finally, inoculation is *indispensable* to protect bovines, which have cohabited with or near others affected with pleuro-pneumonia; that is to say, which have been, or may have been exposed to the influence of the virus, providing it is performed at the moment the animals have been exposed to the virus.

DISEASES OF LIVE STOCK.

BY L. V. TELLOR, M.D.

This is the title of a work written by Dr. Tellor and published by Dr. D. G. Brinton, 115 South Seventh Street, Philadelphia.

To write a book on the diseases of live stock, embracing as this work does 460 pages, is a pretty difficult task. And when we find that it contains anatomy, physiology, hygiene, therapeutics, surgery and pathology of the horse, cattle, sheep and swine, to many it will be looked upon as an impossibility. We have had so many of those works, so-called popular books, that this last is likely to be classified by many like its predecessors. Popular works we do object to, especially in veterinary medicine. They are, generally speaking, of little use. And in this country, where veterinary science is so much behind the age, we would not consider them otherwise than as the means of pushing on or elevating quackery, rather than to help veterinary medicine and agriculture. Still, the work of Dr. Tellor, though a popular work, we have found far better than any which has been written before it, and if the doctor had only left out some of the notices he obtained from some of the *works* he has consulted, it would have been none the worse for it.

CORRESPONDENCE.

To the Editor of the American Veterinary Review:

SIR—Seeing that you have allowed four months to pass without attempting to contradict my official report, in which I state a fact as I found it and can amply verify, I was surprised and humiliated to read your remarks at page 170 of the July number of the *REVIEW*.

I will not, however, resort to the same disreputable plan of replying “you’re another.” I merely repeat that all I said and more is true.

The following are the facts: On the 16th of January last, I telegraphed from Ottawa to Prof. Liantard to meet me in New York, which he did on the 18th. He could not give me any information on the subject of *pleuro-pneumonia* in New York, Long Island or New Jersey, and knew of no cases, but promised to make such enquiries as would discover the disease if it existed during my absence. I returned in eight days, and as I knew that a meeting of the New York Medical Association had taken place on the Monday, when Prof. Liantard would have an opportunity of making enquiries, I was disappointed to be told that he could not direct us to a single case. I was accompanied by Alexander Lockhart, M.R.C.V.S. and J. W. Gadsden, M.R.C.V.S. We saw Dr. Liantard, Dr. Robertson and Mr. Holcomb. Not one of them could direct us to a case, and I quite agree with Mr. Gadsden in saying we would have left there without seeing any case if I depended on our friends at the American Veterinary College. They either wished to deceive us or they knew nothing of the disease, and if they spoke the truth they one and all *were sceptical* of its existence.

On the authority of Mr. McLean, of Brooklyn, I have it that Prof. Liantard did not make any enquiries at the meeting, and only called him back after it was over to ask him if he could show him any cases of pleuro-pneumonia, without mentioning my name to any one. I will leave it for Messrs. Gadsden, Lockhart and McLean to prove the correctness of these statements.

It is to be regretted that the only organ of the profession in America should attain an unenviable reputation for ungentlemanly attacks on those members of the profession who do the most for its elevation.

By inserting this with the inclosed letter from Mr. Gadsden, you will oblige your's truly,

D. McEACHRAN.

Philadelphia, July 5th, 1879.

PROF. D. McEACHRAN:

Dear Sir—On looking over this month's VETERINARY REVIEW,

edited by Prof. Liantard, N. Y. (a few minutes ago) I was very much surprised to read on the last page (170), that "*Two statements appear, which are so at variance with the truth that we cannot refrain from calling attention to them.*" As the veracity of two professional men are thus brought into question, I cannot let this post leave without stating most positively that Prof. Liantard, in my presence, did tell you, more than once, that he did *not believe there was any cases of contagious pleuro-pneumonia in or near New York*, as he had made inquiry of several persons who would be likely to know, for a week past, and *had not heard* of any cases. At your request he telegraphed to a veterinary surgeon at Brooklyn, who, I believe, answered "no cases here at present." But when Dr. A. Lockhart volunteered to get a carriage and take us to Brooklyn to see if we could find any cases there, you invited him, Prof. Liantard, to accompany us. We called on Dr. McLean, veterinary surgeon of Brooklyn, who very kindly told us where we could find some cases; in fact took us to them, although out of his district.

I am quite sure that up to this time, Prof. Liantard was "sceptical of its existence," and if you had believed *what he told you* in my presence at the Veterinary College, New York, on the 25th of January last, you *would have left there without seeing* the numbers of cases near Brooklyn. Of course, I need not relate the terrible sight. I am satisfied Dr. Lockhart remembers the conversation, also the result of it all.

I write this only as a lover of truth and justice. You are at liberty to do what you think best with this letter. Trust you are well. Pray excuse this hurried scrawl, as it is just post time.

Yours respectfully,

JOHN W. GADSDEN, V.S.

In reply to the above communications I would say, that *if four months have been allowed to pass* without our notice of the official report of Prof. McEachran, it is for the simple reason that *we did not see it* until the "Four Bovine Scourges" was sent to us from England. True, we were told by Prof. McEachran that

such report was about being made, and that it would be sent to us as soon as printed, but we never received it. Why? Probably because it was not sent to us, the reason for which we prefer not to inquire for.

The facts which we desire to state are en masse about the same as Prof. McEachran states in his letter. He informed us of his presence in New York, asked us to show him some cases of plenro-pneumonia, which, our practice being almost entirely city practice, we told him we could not do. He went to Washington. We told him we would inquire of Mr. McLean of Brooklyn, and let him know at his return. On inquiry from Mr. McLean, before, at or after a meeting of the New York Veterinary Society, he told us that he had none at present, as he had destroyed the last case in a stable a few days before.

Whether I mentioned Prof. McEachran's name or not, I do not remember, and I doubt if it would have made any difference as to the result. We think Dr. McLean would have shown us plenro-pneumonic cows with or without such special notice being given. When Prof. McEachran returned to New York with Mr. Gadsden, we told him that we did not know if Mr. McLean had any cases or not; that he had said that if we telegraphed to him he would do all he could to show us some; that we suggested the propriety of going to Brooklyn to see him; that we did so, in company with Gadsden and Lockhart; that, thanks to him, and only to him, did we owe the special privilege of finding Blissville. These are the facts, and it can be seen that neither Prof. McEachran nor ourselves, can say "yon are another."

Regarding the letter addressed to Prof. McEachran by Mr. J. W. Gadsden, it appears to us very much like the fable of the bear, which, to save his master from the annoyance of a fly, crushed his head with a heavy stone. We fear that our friend Gadsden in his desire to see "truth come to the surface," is too positive about statements attributed to us, as we are as positively certain that we did not express such belief. Our only doubt was the chance of our exhibiting the gentleman the cases he was looking for.

A. LIAUTARD.

Editor Review :

No one detests more than myself the ventilation of personal matters through the columns of the *REVIEW*, and had not Prof. McEachran's report to the Canadian government been copied in Prof. Walley's most able work on "The Four Bovine Scourges," from which extracts were made in your last issue, I would have preferred to let the matter pass unnoticed in public print. But when we consider the general publicity which the report will gain among the members of the profession, by reason of its connection with "The Four Bovine Scourges," we feel that simple justice to our own efforts in the past warrants a defense against the reflection made in the following extract from Prof. McEachran's report :

"Accompanied by Mr. Gadsden, I visited New York and communicated with the Principal and Professors of the American Veterinary College, none of whom had any experience with the disease, and doubted the correctness of the rumors of its existence."

On page 33, Jan. issue of the *REVIEW*, 1877, in my article on "Stimulants in Disease," read before the meeting of the United States Veterinary Medical Association, held in Philadelphia, on Sept. 20th, 1876, is the statement: "In the summer of 1874, I treated thirty-three cases of epizootic pleuro-pneumonia, &c."

In the report of the Commissioner of Agriculture, made to the United States Government, on the 26th of Feb., 1878, page 49, is the following :

"Prof. A. A. Holcombe, D.V.S., lecturer on 'Special Pathology' in the American Veterinary College, New York, says: 'In reply to communication received from you last month, I can only give the facts relating to contagious pleuro-pneumonia as it exists in the State of New Jersey. It has prevailed to a greater or less extent, in some parts of the State, for a number of years past. That it is spreading is attested by recent outbreaks in localities where heretofore it has been unknown. In September, 1873, an outbreak of this disease occurred on a large dairy farm at North Branch, Somerset County, N. J. It was treated by a quack of Somerville (in the same county), and nearly every case died. I

saw three of the cases and they were undoubtedly genuine cases of contagious pleuro-pneumonia. In June of the next year (1874) I attended an outbreak on an adjoining farm. About forty cows were affected. I treated thirty-three, five of which died. I made post-mortem examination of three, and found all the lesions and post-mortem appearances belonging to the above disease. The treatment given the cases was simply general and special stimulants. The small mortality in the outbreak can hardly be attributed to the treatment, but rather to exhaustion of the infecting virus. Isolation was strongly urged, but could not be effected, owing to the failure of the community to appreciate its contagiousness. The cause of the outbreak is unknown to me outside of the testimony of the owners of the affected cattle. In both instances they had bought strange cattle, one or more of which were coughing, and apparently not thriving. Undoubtedly this was the manner of introducing the disease, yet it needs confirmation. During the summer just passed (1877), a very serious and fatal outbreak has prevailed in the adjoining county of Hunterdon, in the neighborhood of Clinton and Lebanon. Of its cause I know nothing. The disease is a terrible scourge to some localities of that State. An investigation of its cause and the best means of stamping it out is no doubt a subject worthy the attention of the Department of Agriculture.' "

In the May number of the REVIEW, 1878, page 87, in the report of a meeting of the New York State Veterinary Society, J. D. Hopkins, Secretary, says: "A. A. Holcombe called attention to a recent outbreak of this disease in the southern portion of Hunterdon County, N. J., and cited the fact that pleuro-pneumonia is rapidly spreading over that State, and he thought the time was rapidly coming when we will be called upon to prevent its further progress, &c."

Can any one believe that a veterinary surgeon who knows the history of contagious pleuro pneumonia, after giving expression to such statements as above quoted, could for a moment doubt "the correctness of the rumors of its existence?"

We have no desire to detract in any way from the credit due Prof. McEachran for the interest which his visit last January

aroused in our government regarding this disease, but at the same time we do not intend to submit to the implied reflection that until his visit we did not know or believe that our States were infected with contagious pleuro-pneumonia.

Respectfully,

A. A. HOLCOMBE, D.V.S.,

Adjunct Professor of Surgery, American Veterinary College

New York, July 21st, 1879.

VARIETIES.

VETERINARY MEDICINE IN SWEDEN.

BY PROF. E. MORELL, of Stockholm.

The first veterinary school of Sweden was founded by Hernquist (born in 1726). After passing his examination for Doctor of Philosophy at Upsala, he went in 1763, to France, where in Lyons he studied veterinary medicine. In 1774 he founded the veterinary school of Skara, and was professor to that school in 1778. He remained in this function till his death (1808). He was a writer and practitioner of merit. One of his best students, S. Norling, took his place in 1814. In 1820 he organized, by order of the government, the veterinary school of Stockholm, and was appointed director. He held this position in both schools till he died (1855). The Skara school was a preparatory school to that of Stockholm, where the students, after two or three years, passed their examinations of veterinarians. In those days as now, there were scholars from Sweden, Norway and Finland. A large number of the veterinarians of those three countries come from the Stockholm school.

In 1867 a royal ordinance required, for entrance to the Stockholm school, the degree of *bachelor es letters*. This measure elevating the veterinary education, was taken through the exertions of Professor Fredrick Lundbrey, and instead of diminishing the

number of students, it increased it. In requiring preparatory knowledge asked in but few, if any, of the European schools, the State also improved the pecuniary income of the veterinarians. A natural consequence of this material improvement was an increase in the number of the students.

The student, aged from 20 to 21, having passed his baccalauréat, is admitted to the veterinary institute. The length of duration of the studies is four (4) years, though it may be of six for the backward scholars.

The veterinary institute has four professors, with a salary of 5,600 francs, a lecturer who receives 4,200 francs, an adjunct and an instructor horseshoer.

Two of these professors, the adjunct and the shoer, live in the school, the others receive an indemnity of 700 francs for lodging.

The course is divided as follows :

Prof. H. Kinnberg—Anatomy, physiology, zoology and pathological anatomy.

Prof. Ernest Morell—Zootechny, sanitary medicine and clinical medicine.

Prof. G. Sjostedt—Surgery, obstetrics, horse-shoeing and clinical surgery,

Prof. C. Lingvist—Pathology, therapeutics, epizootics, pharmacodynamics, pharmacotechny and clinic.

Lecturer, C. Ericsson—Botany, physics, chemistry, pharmacology.

The Adjunct assists in the clinics, and the Instructor Marechal teaches horse-shoeing.

There are in Sweden, thirty government veterinarians, with a salary of 2,100 francs.

Travelling expenses for the State are paid, 6 francs with indemnity.

Regiments of the army, while in garrison, have a regimental veterinarian (lieutenant), with a salary of 4,200 francs, and a squadron veterinarian (sub-lieutenant), with a treatment of 2,800 francs.

The number of civilian and army veterinarians is about 170,

all depending, in a scientific point of view, from the medical direction.

In 1866 a credit of 700,000 francs was allowed for the erection of another school at Stockholm, which will be finished in 1880.—*Echo Veter. Belge.*

VETERINARY LITERATURE.

The following bona-fide horse-farrier advertisement has been handed us by a friend, with the request that we would give it a place in the veterinary department. We do so with pleasure, simply remarking that if a cogent argument in behalf of the establishment of a veterinary college were needed, it would be found in the annexed advertisement, which we copy *verbatim et literatim et punctuatim*, except the name and place of residence of the advertiser.

“HORSE FARRIER.—The under sind lat from chester conty Intends follown Doctern horses & stock of all Kinds he has had great deal of practs among Sick horses & stock & flaters him self able to Master Most all deases & complants among horsis Pleas giv Me a call & if no cure no pay Except for medison if bought by Me. all orders left at My Residence will be promptly attend to.—*Farmer and Gardener.*”—*Prairie Farmer.*

EXCHANGES. ETC., RECEIVED.

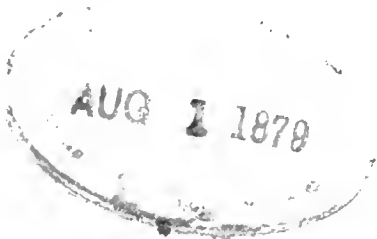
HOME EXCHANGES.—Proceedings of the Medical Society of Kings County, Medical Record, Country Gentleman, Scientific American, Turf, Field and Farm, Ohio Farmer, Prairie Farmer, Practical Farmer, Medical and Surgical Reporter, &c., &c.

FOREIGN EXCHANGES.—Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Clinica Veterinaria, Gazette Medicale, Revue fur Thierheilkunde und Thierzucht, Schweizerisches Archi for Thierheilkunde (Berlin), Tidtskrift for Veterinarer, &c.

NEWSPAPERS.—American Cultivator (Boston), Husbandman, Ploughman, New England Farmer, Western Sportsman, Leader (Canada), The Gazette (Canada.)

COMMUNICATIONS.—F. S. Billings, V.M., Prof. D. McEachran, J. McKenzie, J. W. Gadsden, C. B. Michener, W. L. Williams, A. A. Holcombe, N. H. Paaren.

BOOKS.—Inoculations preventive, par. Ed. Dere.



AMERICAN VETERINARY REVIEW,

AUGUST, 1879.

ORIGINAL ARTICLES.

A NATIONAL VETERINARY POLICE. *

BY F. S. BILLINGS.

The public spirit manifested by the proprietors of the *Turf, Field and Farm*, in opening their pages so liberally to the discussion of a *National Veterinary School*, and a *National Veterinary Police*, should not fail of appreciation and acknowledgment from our stock-raisers, and every person interested in the welfare of our domestic animals, and the protection of the same, not only as animals, but from an economical point, from the ravages of pestilential diseases. Scarcely a day passes without its chronicle of the increasing ravages of some of these pests by some of our daily papers. In one paper we read of the rapid extension, as if some foul fiend were at work, of *hog cholera* among the swine of our western breeders. Discouragement, almost poverty, to many of these men, is the yearly result from these, at present, apparently uncontrollable invasions. In a late paper we read of the landing of a

* Reprinted from the *Turf, Field and Farm*, with kind permission of the author.

cargo of sheep afflicted with *hoof and mouth disease* at the port of Liverpool, the same having been shipped from Boston. It would be of immense benefit to the nation to know from whence these sheep came. Britain is becoming alarmed. Her already decimated flocks are threatened with attacks from an old enemy but from a new quarter. A new and promising trade is becoming daily endangered by the reports of outbreaks of one of the other of these animal pests. We stand, as a nation, *impotent* to check them. We are, in nearly every part of the country, in great want of competently educated veterinarians, to give able support to the people, by investigating the causes of these outbreaks, and by executing measures toward their restriction and gradual stamping out. The sheep in question were shipped from Boston, but from whence were they collected? *Port inspection* is useless, unless it helps us to unravel these mysteries. From Massachusetts these sheep did not certainly come. Did they acquire the disease on the railroad, from transport in non-cleaned and non-disinfected cars, or were they rested in yards where hogs or cattle, complicated by the disease, had been previously confined? Were the diseased sheep all of one lot, collected in one place, or had they been collected in small lots and placed together? Which lot was the one originally diseased? These and many other points are the ones the elucidation of which is only possible at the hands of competent and exactly educated veterinarians.

During our short period of practice, we have given some little time to the study of glanders in and around our native city, Boston. In a period of not over eight weeks, we have easily gained information of *seven cases* of horses infected with this loathsome disease. Five of these cases have been discovered in the public Wednesday market at Brighton, Mass. *Three* of these five horses have been offered and sold at public auction at the above-mentioned place. All these horses have been driven heedlessly and unrestrainedly over our public highways. *No veterinary police inspection exists at the market in question.* Yet the good old commonwealth has a Board of Cattle Commissioners, supposed to exercise control over this and other animal pests. We are not entering into a personal war with these Commissioners. Far

from it. The trouble is not so much with them as with the laws and regulations which are entirely inadequate to the business in hand. The Commissioners, only one of whom is active, do not and cannot, single-handed, control these dread ravages. They alone have all the responsibility of action. The veterinary and empirical practitioners are left too much to act on their good will. Horses are kept and treated in advanced stages of the disease in some of our boarding and livery stables, as was fully demonstrated by a case recently killed by authority of one of the Commissioners. Just so long as this laxity of the law exists, just so long as every practitioner, whether graduated or empirical, is not legally made actively responsible, just so long as the civil police are not made responsible for reporting every suspicious case, just so long as stable-keepers, horse-owners and the public in general are not made legally responsible, and in the most active manner, for the notification of the proper authorities of every suspected case of an animal contagious disease—just so long as this continues, shall we be thus impotent. It is useless to say we *are* responsible. The continual discovery of animals, especially horses, being held and treated for such disease, is direct proof that the contrary is the case. It is simply ridiculous, as in Massachusetts, having but one veterinary police official for the entire State. Every practitioner should be such an official so long as we are in our present weak numerical condition. The execution of the law should be given to the local civil officials, without the necessity of notifying the head authority of every individual case. The local authorities should be empowered to call in a properly authorized and competent local veterinary officer, whose verdict should be supreme, save in questionable cases, when consultation should be required, or the judgment of the chief State official called upon. Reports of all such cases, and the action taken upon them, should be sent to the State Commission, better State Board of Health, at least quarterly. It is a great mistake having separate Commissions for the animal pests. A State Veterinarian attached to the Board of Health would be much more advantageous. The relations of many of our animal diseases to human welfare are much more immediate than the majority of the public suppose. Thirteen cases of glanders by human beings, nine being

males and four females, and one a child about five years of age, have been collected by the Massachusetts State Board of Health between the years 1859 and 1876. The dangers from nursing children with milk derived from tuberculotic cows has only been too emphatically demonstrated by the lamented Gerlach and others. Numerous cases are recorded in the annals of medicine of apthæ epizoticae by human beings from using uncooked milk of cows afflicted with hoof and mouth disease. Trichinosis by man from eating uninvestigated and half-cooked pork is no seldom occurrence. American pork has acquired no enviable continental reputation in this regard. A recent investigation by Health Commissioner Wolf, of Chicago, demonstrated that *eight of one hundred swine* examined, were infected by these parasites. In 1877, 343 cases of trichinosis American pork were reported in Germany; 138 people are reported as having been diseased with trichinosis. In 1878, of 35,510 American hams which were subjected to inspection at Hamburg, 297 were found infected. Such statistics could be easily multiplied by searching the various reports of Commissions created for such purposes.

It is of great public interest and importance to know in how many of our States we have any laws or regulations for the suppression of these animal pests. In 1876, Dr. Bowditch, of Boston, published a very interesting and valuable book, which should be on the table of every practitioner in this country, whether veterinary or medical, entitled, "Public Hygiene in America." The same is a most condemning proof of our insufficiency in this regard. With reference to laws for the prevention of *cattle diseases*—*cattle diseases, it should be noticed—we find twenty-one States without any whatever; ten States have some regulations; sixteen States are reported as indefinite, and from one illustrious State no information in this regard could be gained.* No national laws or regulations of any importance exist, so far as we know. There is no competent veterinary councilor or head in connection with our national government. In advocating a National Veterinary Police, we are well aware, we touch upon one of the most sensitive points, not only of State, but individual ignorance.

We are not overstepping the boundaries of truth when we as-

sert, that as a people we are as yet absolutely ignorant with regard to the true nature of this momentous question and the many side issues connected with it.

It is at present pretty well known to the many readers of the *Turf*, that we are stubbornly and persistently advocating the many advantages which would be offered to the nation by a National Veterinary School, as contrasted with State schools or uncontrolled private institutions. In doing this, we are, to the best of our ability, following the teachings and evidences of history, and endeavoring to make them of *practical* value to the people of this country, whose servants we are. In advocating a *National Veterinary Police*, the same desire fills our mind, and the ultimate hope of success inspires our ambition, hard as the task at present appears.

We will, for a moment, give our attention to the *doctrine of State rights*, and its probable results. At present, the minds of our cattle breeders and dealers are much excited on the question of the *contagious lung disease* of cattle. New York, New Jersey and Pennsylvania at present appear to be the centre of contamination. New York, by the liberal appropriation of funds and the passage of exacting and appropriate regulations, is, with the assistance of that able veterinarian, Mr. James Law, doing her best to *stamp out* the disease. "Stamp out" is but another term for *kill out*. New Jersey is, on the contrary, temporizing with the destroyer. See Mr. Holcombe's letter in the July number of the *Veterinary Review*, where more than abundant proof is given of the weakness and fallacy of the New Jersey policy. The action in that State is of the "do not hurt him" or temporizing kind. One can but ask, What is the use of the State of New York spending thousands of dollars to kill out the disease, while New Jersey is keeping a pestilential hot-house by her side? We might as well endeavor to keep the small-pox out of the country when it is raging in Great Britain, by doing away with all quarantine regulations at one port of entry, while keeping them active at all others. Unless we quarantine, *i. e.*, shut off all communication from and with such a free port, our quarantine at the others would be useless. So will it be with New York. So long as the

temporizing policy exists in New Jersey, the former State has but one recourse, and that is, to place an embargo, not only on all cattle from New Jersey, but upon all cattle coming THROUGH that State. This can only be carried out at great expense. New York would have to place, at certain fixed points along her New Jersey frontiers, numerous quarantine stations and veterinary officials to inspect and prevent the entrance of such cattle into her territory.

The State of New Jersey is to be treated in such a case only as an enemy from which she has much devastation to fear. The same is true of every other State, whether far or near. New Jersey, under such circumstances, becomes a nursery from which pestilence may be dispersed all over the country. There is but one way to obviate such an evil, and that is to have a National Veterinary Police Code, with State execution of the laws, subservient in a measure to the control of the National Government. Every intelligent person must admit that neither person, town nor State should be permitted to maintain a nuisance endangering the person or property of any other person, town or State. It is self-evident that *State codes* can *never* have that unanimity of purpose necessary to this end. Where one would be precise and exacting, another would be indefinite and non-exacting. According to the intelligence, education and appreciation of existing dangers by the respective State Legislatures, would be the nature of the laws made and the manner of their execution. For many years some States would be pestilential centres, continually giving rise to sporadic invasions of their sister States, causing greater or less devastations of the animal property of those States of no inconsiderable economical importance.

To meet such an evil for ever, and to lay the foundation for a permanent and in every way competent institution, the National Congress should authorize the President to, or itself select a committee of *honest men* to select the three most competent, educated veterinarians in the country; these men to select two able and non-partisan lawyers, the five to draft a code of veterinary police laws and regulations suitable to the needs of the entire country, and in keeping with the most advanced knowledge of our time.

From these three veterinarians should be selected one, to be called Veterinary Inspector-General of the United States. He should be attached to the National Board of Health, as well as National Bureau of Agriculture. He should hold his appointment until *sixty* years old, unless incapacitated for work by disease, and should receive \$5,000 per year actual pay. The same should be, in full, continued to him during life, and in case of his death, to his widow or minor children. This plan is, we know, anti-American, but, on the other side, it is the only one which can result in obtaining the best man, and that is nothing else than best serving the needs of the people. We would have this position awarded for the first time by competition, before the members of the National Board of Health, or before a commission of our most intelligent stock raisers, selected by the President, one each from the different geographical sections of the country.

Each State should have a State Veterinary Inspector-General and county and district veterinary officials, and notwithstanding our great poverty in competently educated, graduated men, still it should be made a *law* in each State *that no empiric, no matter how "practically" competent such a man may be considered, should ever hold such an official position.* This is the point toward which we have to aim, the goal to which we must attain. It contains nothing opponent to State rights in the true sense.

Let us see how such a system would work. We will suppose District Veterinary Surgeon L. lives in Columbus, Ohio. We will assume rinderpest appears, apparently a sporadic case, in his district. He at once telegraphs the State Inspector-General, who in his turn telegraphs the National Inspector. The latter notifies each State Inspector-General, who in his turn notifies each district and county or other local inspector in his respective State, in a manner to be fixed by law. What is the result? The entire country is as one man armed and on the alert against the devastating fiend. Not a head of cattle, not a sheep or swine can be moved without its authorized "clean bill of health" and its proper supervision from point of shipment to destination. The end attained is the greatest possible protection of the animal

property, not only in each State, but of every individual in each State. State rights have suffered nothing. Such a code in no way interferes with any State making such special regulations as any peculiarities of her position may require; on the contrary, it gives each State a competent force for the execution of the same.

But we have not the requisite number of such educated veterinarians, says the earnest inquirer. Good! Let us, then, give them a chance to make themselves! The men are to be had; the educational opportunity alone fails them. *This most desirable end can only be attained by a national institute for the study of comparative and experimental pathology and the education of competent veterinarians, and, as a natural result, one educational standard for all graduates. Who will be the first public-spirited man to set the wheel in motion? Wealthy stock-raisers of America, wealthy citizens who are not stock-raisers, but lovers of your country, an opportunity here presents itself to render your names immortal! Local or even State immortality is often possible, but the opportunity to become a nation's benefactor is not too often presented. All this grand cause needs, is for one man to be up and doing. One grand action or actor is never without the minor lights seeking to follow. Who will be this first light? The country awaits the man to strike the fire. The faggots are piled up, the timber seasoned, the first spark alone is wanting to start a fire which will warm, irradiate and bless our entire country. The suffering animal world calls upon you, stock-raisers of America, to relieve it from its pestilential curses. Ignorance cries to you to let in the light. Poor men, suffering from the loss of their little all, spread out yearning hands and breathe earnest prayers for protection. On every side is want, is need, is suffering. Who of you all will be the Samaritan, not to pass by on the other side, but to set the wheel in motion for the relief of all this suffering, all this devastation, all this waste of the nation's wealth?*

THERMOMETRY IN CONTAGIOUS PLEURO-PNEUMONIA.

BY ED. DELE.

Continued from page 191.

What can be said of the citation of Mr. Brown, as already mentioned, that a flock of animals which had been exposed to the contagion of pleuro-pneumonia, must be divided into two lots; one, B, composed of healthy animals, with a normal temperature; the other, A, containing those whose temperature is above 103° Fahr., and to transfer from B to A the animals whose temperature would have been noticed *once a week*?

We must say, first, that the increase of temperature does not come before the apparition of symptoms, which, I will admit, may belong to other diseases as well as to pleuro-pneumonia: loss of appetite, of rumination, of milk, etc. Again, one must not lose sight that one animal from lot A is removed; he must not be transferred to B; the increase of temperature which it shows may depend from another disease: he must be *isolated*, for fear that in lot A he may become affected with the disease of one of the animals whose temperature is more than 103° Fahr.

It is thus that No. 8, observ. Sth, had an œdematous painful swelling in front of the mammæ, with a temperature of 39°. She was not separated from the others.

No. 3, observ. Sth, which had calved the 4th of November, had a temperature of 39°2 the 11th, 40°5 the 14th, 39°5 the 15th, 38°3 the 18th, 38° the 21st, 40°6 the 23d, and gave 27 litres of milk. She was not sick—was not separated.

No. 4, observ. Sth, had a temperature of 38° 2 the 11th of Nov.; the owner had her isolated the 17th, and the next day she showed a temperature of 38°3.

Nos. 3, 5 and 6 of observ. 7th, were not isolated, because, though sick, their temperature remained normal.

Then, finally, a higher degree of temperature does not allow to diagnosticate in a bovine, which had not been exposed to the virus of pleuro-pneumonia, the existence of that disease; it may at the utmost, render it suspicious.

But the thermometer helps to show *assuredly that a diseased animal having been exposed to the pneumonic virus, and whose temperature remains normal, is not affected with pleuro-pneumonia.*

I have mentioned already the three symptoms: diminution of appetite, of rumination, of lactation, which always accompany the increase of internal temperature. It is somewhat difficult to distinguish, at the first meal, an animal which eats less, in a stable where the food is not given separately to each animal; or difficult to notice, at first sight, the animal whose rumination is diminished; it is always easy to see when the lactation is reduced. Whoever milks the animal, recognizes it easily. It is for me the symptom of pleuro-pneumonia, which will be observed at first, just as well as it would in other diseases.

It arrives that milking decreases suddenly, and is reduced to one liter, or even less, after three or four days. But it is not always so: No. 4, observ. 8th, gave 10 liters the 17th of November, 15 the 15th. Again, No. 1, observ. 5th, milked 18 liters the 27th of September, 12 the 29th, 17 the 7th of October, and then came down to 15, to 6 on the 18th, and was almost dry on the 19th. Still the temperature had varied but little. We can then conclude also that the diminution in the milk is not *in proportion* with the increase of temperature.

But the diminution takes place in all diseases. It was diminished in cow No. 8, observ. 8th, which had a swelling under the belly. Nos. 3, 6 and 5, of observ. 7th, had it also, as consequence of poor feeding.

Shall I say a word of the horripilation. It shows nothing as far as pleuro-pneumonia goes. I have noticed it in healthy animals, tormented by flies. It has been such in some cases that while taking observations I often feared the existence of the lung

diseases, which was an error; and, besides, pleuro-pneumonic animals are often seen with smooth hair.

Such are the *theoretical conclusions* I came to by the use of the thermometer. Let us see now in the *practical* point of view.

I must say first that much patience was required to complete my series of observations, as I will show :

(a.) I first introduced the instrument in the *mouth*. I will only cite one observation. Oct. 30th the thermometer marked in my office $14^{\circ}3$. I placed it in the mouth; after the first minute it shows $32^{\circ}5$, after two minutes, $35^{\circ}5$; three minutes, $36^{\circ}1$; four minutes, $36^{\circ}6$; five minutes, $36^{\circ}9$; six minutes, 37° ; seven minutes, $37^{\circ}1$; 8 minutes, $37^{\circ}2$; 9 minutes, $37^{\circ}2$. Then 8 minutes to obtain that temperature, and 9 to show that $37^{\circ}2$ is the maximum.

(b.) At three different times I held the bulb of the thermometer in my right hand. The 25th of Oct., in my office, at 46 minutes past three it marked $13^{\circ}6$ —at 42 minutes past seven, it showed $14^{\circ}8$ in my office also—and at 34 minutes past 8 outside it registered 10° .

HOURS.	DEG. MIN.	HOURS.	DEG. MIN.	HOURS.	DEG. MIN.
3 47 it marked	24 5	7 46 it marked	30 7	8 43 it marked	30 8
3 48	26 3	7 47	32 0	8 44	31 0
3 49	28 0	7 48	32 8	8 45	31 4
3 50	30 0	7 49	33 0	8 46	31 7
3 51	— —	7 50	33 6	8 47	32 5
3 52	31 8	7 51	34 0	8 48	32 9
3 53	32 3	7 52	34 4	8 49	33 2
3 54	32 8	7 53	34 6	8 50	33 7
3 55	33 2	7 54	34 6	8 51	33 9
3 56	33 5	8 35	25 1	8 52	34 0
3 57	33 9	8 36	27 7	8 53	34 2
3 58	34 0	8 37	28 6	8 54	34 4
3 59	34 1	8 38	29 0	8 55	34 7
4	34 15	8 39	28 7	8 56	35 0
7 43	24 4	8 40	30 0	8 57	35 3
7 44	27 3	8 41	30 1	8 58	35 4
7 45	29 0	8 42	30 4	8 59	35 4

In this experiment my hand warmed up while in my office.

(c.) I have observed the increase of temperature, in placing the thermometer in the rectum of cow No. 4, observ. 5, the 26th of October.

The heat of the stable was 20° . After one minute the instrument rose to $37^{\circ}5$ to $35^{\circ}5$; after two, to $37^{\circ}6$; after three and after four minutes, it registered the same.

In cow No. 6, as the instrument is placed in the rectum it marked 30° ; after one minute it shows $35^{\circ}6$; $36^{\circ}8$ after two, $37^{\circ}1$ after three and four minutes.

The 28th of October, the external heat was $13^{\circ}9$. Placed in the rectum of cow No. 4, the instrument rises in one minute to 34° ; to $36^{\circ}4$ in two; to $36^{\circ}9$ in three; to $37^{\circ}4$ in four; and after five minutes, to $37^{\circ}6$.

Introduced in the rectum of cow No. 6, in six minutes the instrument goes up to $37^{\circ}2$.

These experiments prove that, in the hand, the thermometer rises slowly, somewhat fast in the mouth, very fast in the rectum, as in those, there is no loss of heat.

Therefore, it requires five or six minutes (five according to Fleming), for the thermometer when in the rectum to reach the maximum of temperature; say 36 minutes to take the temperature only in six animals; in supposing that the animal does not rebel against the examination and remains quiet.

When I wrote the first part of this work, I did not think that the constataions of the temperature would ever be difficult or even impossible. 1st, on account of a peculiar nervous impressionability; 2d, of the irritation produced by the flies; 3d, at the pain produced at the tail, by the swelling following the inoculation; 4th, or on account of excessive warm weather.

For instance, I have not been able to take it in Nos. 4 and 5, observ. 5.

There are many errors in taking the temperature that one may commit.

For instance, those inherent to the dilatations of the mercury, whether the length of the instrument or the bulb alone is introduced in the rectum.

In relation to the difficulties likely to be met in observing the contagion in bovines, I would repeat with Mr. Clare Sewell: "The trial thus recommended is practicable in milking stables of London, where the cows are quiet; but how would it be amongst animals living in the field or turned out?"

I will add that I believe the use of the thermometer generally requires the assistance of two persons * * * *

* * * *

In concluding, I will say that my observations are not numerous enough to arrive at positive conclusions, the number of animals at my disposition having been limited. Many other experiments ought to be made, and while calling the special attention of my colleagues to the question of thermometry, I will be glad if the documents I have presented can be of some utility to elucidate this important question.

EDITORIAL.

ARMY VETERINARY SURGEONS.

The position held by Army veterinarians has been all over the world a subject which time after time has been brought before their respective authorities for improvement and elevation—whether it has been because the social standing and recognition was not equal to the education and services rendered by the veterinarian, or because his financial resources were not equivalent to the position and rank which he was called upon to hold. At any rate, French, English and German veterinary journals have on different occasions published a number of communications on this important and interesting topic, "The Army Veterinary Surgeon."

We have often given our thoughts to the same subject and often regretted that the American Army veterinarian should hold the position and rank which we understand he held up to almost to-day. Still we did not very well see how the evil could be palliated as long as veterinary medicine was so little appre-

ciated in the United States, and we promised ourselves to wait and watch our opportunity to bring the subject in time before the proper authorities.

The letter of Mr. Meyers of Cincinnati, which was published in our last issue, brought the subject, however, before the public just in good time, and to-day it receives an answer from the pen of Doctor E. P. Vollum of the United States Army, to whom we are thankful for his kind expressions towards veterinarians, and for the opportunity he gives us to present our readers with the new "General Orders" relating to veterinary surgeons in the Army.

The reading of the latter and of the order will show what great improvement has been wrought in relation to the position of the veterinarian. The most essential, we think at present, is the Order No. 3. The fact that none but *regularly educated veterinarians* are to be appointed, we consider a most important step, one which will have for effect to turn out from the army men at present entirely unqualified to practice, and which will oblige a few *self-made* good men who now hold positions, to complete their studies and obtain their degree, some of whom we know will be too happy to do so if they can only obtain from their commanding officers the leave of absence they would require. For after all, would it not be unjust to refuse to those men the opportunity of keeping their positions.

We may, however, make objections to the mode of appointments—"the recommendation from the commanding officer of the regiment, supported by the requisite proofs of learning and skill, and by approval of intermediate commanders." The credentials of a candidate, his diploma, ought, it is true, be sufficient proofs of learning and skill, but we must not lose sight of the position of veterinary education in the United States; we must not forget that veterinary schools are scarce in our good country; we must not forget that *an infamous trade in the sale of worthless degrees* has been, and is likely to be again carried out, whether in human or veterinary medicine; and as for those who may hold foreign degrees, should we be less careful than European powers would be with American graduates, and in such a case the order would be of

little use. It seems to us that the proper way would be to have a board of examiners appointed, medical and veterinarian experts, whose duty should be not only to examine the credentials of a candidate, but also to examine the candidate himself, to grant them the requisite proofs of learning and skill, which his commanding officer might require from him before recommending him for the position. Similar to the European mode of appointment, this would give our army a corps of veterinarians which, though in a limited sphere, would render the country an immense amount of good services. An Army Veterinary Bureau connected with the Medical Bureau at Washington, similar to those of France, England and Germany, with a chief or principal veterinarian, could to our little army be of great benefit. While, however, we congratulate our colleagues of the army on the good change brought in their position, while we feel thankful to the head of the War Department for the steps so wisely and justly taken, there is something yet more satisfactory to us and to the profession at large. It is the proof that the work which has been carried in the United States for the last few years has not been done in vain, that veterinary science has again obtained a foothold in America, and that the day is fast approaching when it may rivalize with the veterinary science of Europe.

NATIONAL AGRICULTURAL CONGRESS.

We have received the circular for the next meeting of the National Agricultural Congress, which will take place in Rochester, N. Y. September the 15th. This we understand is going to be a great meeting, and one from which much good may be derived to agriculture. By the circular we notice a number of standing committees, and amongst them several names which are familiar to us, being connected more or less with veterinary medicine, which in act is so closely united to agriculture. We regret to notice the name of only one veterinarian amongst the different committees. We think that if members of the veterinary profession were in sufficient number, a very important committee could be established and be of much advantage in such a congress,

and that would be a committee on diseases of domestic animals.

Veterinarians ought to belong to such a congress, they ought to be members of agricultural societies, judges in agricultural fairs—their studies, their education, their profession render them fitted for the duties of such positions.

ASSOCIATION MEETING.

The next regular annual meeting of the United States Veterinary Medical Association is called by the Secretary to be held in the new lecture-room of the American Veterinary College, on Tuesday, the 16th of September, 1879. This being the only Veterinary Association representing the national interests of veterinarians in the United States, its meetings should command the attention and attendance of every member of the profession. It could and should exercise a potent influence in the advancement of veterinary science, not alone by holding very agreeable semi-annual social meetings, at which some routine business and discussion of abstract questions occupy the time, but by seeking to elevate the standard of veterinary education, the development of educational resources, and the investigation of contagious diseases. Although the Association is honored with a committee on diseases, it has never received an official report on pleuropneumonia, hog cholera, trichinosis, tuberculosis, anthrax, nor glanders and farcy, all of which diseases affect the domesticated animals of the United States. This Association should have in her archives the yearly history of these and all other contagious diseases, and if it is her desire to interest the government in the cause of veterinary science, she can in no way accomplish it more readily than by earnest, efficient labor in the investigation of the dangers which surround this most important agricultural interest.

The attention given professional matters by the public at present argues well for our future if we but improve our opportunities, and the coming meeting of the United States Association gives promise of being the most memorable in the history of her existence. At least two competitors are in the field for the Association prizes, and their papers will undoubtedly afford ample material for interesting discussion and debate.

EXTRACTS FROM FOREIGN JOURNALS.

SUPPURATIVE CEREBRO-SPINAL MENINGITIS.

BY M. M. NOCARD.

After suffering with a suppurative collection of the sinuses of the right side, the subject of this case was operated upon by trephining and irrigations of astringent solutions. At first she seemed to improve as indicated by the diminution of the discharge, and the reduction in size of the swelling of the intermaxillary space. Still, some time afterwards the wound of the sinuses remaining open and fistulous, the wound was re-opened and some little pieces of necrosed bone removed. This had to be done over a second time some days later. Some six weeks from the first day of operation, she was found lying down, with contracted features, eyes widely open, respiration difficult, roaring, pulse hard, 45 per minute, mucous membranes injected, temperature $38^{\circ}9$. When standing up the roaring disappeared. No appetite. The animal seems worn out, in a deep coma, her head hangs down and rests in a corner of the stall, perfect immobility, entire indifference to surroundings. The next day same coma, reappearance of the nasal discharge—greyish, purulent, foetid, not adherent to the nostrils; no cough. The wound of trephining is fistulous, suppurating, and surrounded with thick and very painful swelling, well marked periostitis of the parts. The frontal bone is diseased extensively. Her condition keeps on with well marked symptoms of *immobility*; the temperature rises to $39^{\circ}8$ and $40^{\circ}5$. She has an attack of vertigo, pushes to the wall; all her muscles, especially those of the neck, are the seat of violent contraction. These symptoms subside to reappear again several times until death takes place.

At the post mortem all the lesions are found in the cranium and nervous centers. The frontal bone is diseased extensively,

softened and infiltrated with very offensive pus. Periosteum thickened, lardaceous, and hollowed here and there with suppurative centers. These lesions exist also on the internal plate of the bone and can be followed to the ethmoid, the volutes of this bone forming a mass of gangrenous purulent substance, with an infectious odor, with loose pieces of diseased bone; the cribri-form plate is also diseased, and it is through it that the inflammation has reached the encephalic envelope. The dura mater is very adherent to the bones; the two layers of the arachnoid are inflamed, adherent together in numerous places, and show a whitish purulent serous infiltration, extending into the meshes of the pia mater. The lateral ventricles contain a puriform liquid. Beyond the bulb, the cavity of the arachnoid shows only little marks of the inflamed condition of the cranial meninges, but the central canal of the marrow contains drops of pus analogous to that of the lateral ventricles and much thickened.—*Archives Veterinaires*.

ABSCESSSES OF THE MESENTERY OF THE SMALL INTESTINES—INTERMITTENT COLICS.

BY MR. LAHOGUE.

Two cases are reported by Mr. Lahogue, which, while they throw but little light on the diagnosis of the disease, are no less interesting to the point of view of the etiology of those intermittent colics so commonly fatal in horses. The first case is that of a mare which had been ailing for two months past without presenting any special symptoms. The history is that she had frequently suffered with light colics; that her appetite was irregular and she had lost considerable flesh. Under a mild treatment of laxative and careful diet, she seemed to improve; but some days later was taken with more severe symptoms, which were somewhat relieved, and after a third attack she died. On *post mortem* the abdomen is found containing a large quantity of liquid, of wine color, mixed with purulent matters; the intestines are congested, especially the small intestine, which is almost black in its whole

extent. Suspecting an abscess of the liver or of the walls of the abdomen, a careful research showed a very large tumor in the mesentery of the small intestine, occupying about four or five metres of its extent. The opening of the abscess through which the pus had escaped, measured from eight to ten decimetres in length. The cavity is multilocular, the walls of the cavities varying in thickness from two to four centimetres. The mass is irregular and bosselated, measures about forty centimetres in length and in width ; it weighed thirteen kilograms (about twenty-six pounds). Its contents is a pus yellowish, granular and quite thick. No important blood vessels run through it.

The second animal was a filly, which was suffering with colics, and which was in such condition at the time of the visit that a fatal prognosis was made at once. The animal died soon after. At the post mortem, as in the first case, on opening the abdomen, a large quantity of pus flew out, mixed with purulent matter and pieces of false membrane—indications of a severe peritonitis.

Intestines and mesentery are congested. The mesentery in the duodenal portion of the small intestine has a large pouch about as big as the stomach. The walls of this cavity are of a white bluish color ; it contains about fifteen liters of white yellowish pus, creamy, rather liquid. The pyogenic membrane is yellowish, and the walls of the sac about one centimetre thick. Dividing columns in way of formation are found in the cavity. The filly had begun to be sickly for a month to six weeks, and only then began to lose flesh.—*Archives Veterinaires*.

PERSISTENCE AND HYPERTROPHY OF THE THYMUS GLAND IN A TWO YEAR OLD HEIFER—DISTURBANCE OF THE CIRCULATION, RESPIRATION AND DIGESTION.

Under this heading, Mr. Collin reports in the *Journal of Zootechnic* the case of an animal brought under his observation. The condition of the symptoms is described as follows: The animal presents an enormous swelling on the dew-lap, extending to the lower face of the chest and between the front legs,

several centimetres thick, hard and tense, neither warm or painful on pressure. The skin covering it is free from injury and without external marks of irritation. There is a little swelling under the sub-glossal space. The jugulars are swollen and give to the finger the sensation of a hard liquid column, no venous pulse. The auscultation of the heart shows less strength and more frequency in the beatings, though no irregularity in the cardiac contractions. Not able to feel the pulse at the carotid; at the glosso-facial it is frequent, small and soft, but very regular. The conjunctivæ are slightly injected. The percussion of the chest gives a normal resonance all over and does not show the slightest increase of sensibility even in the cardiac region. By auscultation, the respiratory murmur is heard on both sides, but somewhat weaker; auscultation of the trachea shows, on the contrary, an increase in the laryngo-tracheal sound; but no pathological sounds otherwise. Respiration is regular, slow and quick. There is no cough, but frequent eructuations; slight tympanitis—appetite diminished, though the animal eats yet some bran and oats. She drinks with pleasure milk or barley flour water. Rumination irregular, fæces frequent and natural. The animal keeps the standing position, her neck stretched out, with head extended and somewhat elevated. She dislikes to move, and when she does, her respiration becomes deep and difficult.

At the post mortem an enormous tumor was found situated under the inferior face of the trachea—partly out of the chest, partly in it. It is the thymus gland, weighing 3 kilogrammes and 600 grammes. It is lobulated, and of a paler color than the normal gland, though red, firm and harder. The lobules are united together by condensed cellular tissue, adherent to the trachea; it envelops the anterior aorta and its branches, the anterior vena cava, the œsophagus, pneumo gastric nerves, etc., etc.,—in fact, all the organs contained in the anterior mediastinum. Numerous sections exhibit several softened points, round, well defined, varying in size from that of a nut to that of an egg; these are formed of softened substance, and are of a blackish color; some contain yellowish, small spots. In the anterior part of the chest, the costal pleura offers on its free surface a yellow-

ish substance, hard, rough and adherent to it. There is but little serosity in the pleural sacs. The lungs are healthy, but pushed upwards and backwards in the thoracic cavity. The heart offers no pathological lesion. The meat looks well, and is of good quality.

NECROSIS OF THE HORIZONTAL PORTION OF THE RIGHT BRANCH OF THE LOWER MAXILLARY BONE.

Towards the middle of the month of March Dr. Antonio Russi was called to examine a handsome bay horse of Neapolitan breed, which presented a large swelling corresponding to the level of the horizontal portion of the right branch of the inferior maxillary bone. The history of the case was, that a month before he had been bitten by a stallion in that region. The treatment then consisted of the simple application of chamomile water, a kind of panacea in that part of the country, and the animal left to nature for recovery. On examination, he found a small opening in the horizontal portion of the inferior maxillary, which, being probed, proved to communicate with the mouth, and was surrounded by an œdematous swelling which rendered mastication difficult. The probe detected the presence of several small pieces of bone, one of which was removed at once. The pus, which was characteristic, flew out more readily. The animal is much emaciated.

Leaving the question of prognosis aside, the animal was thrown down, the opening made larger, and all the pieces of loose bone removed, leaving a tract of 3 centimetres outside and two in the opening corresponding to the mouth. A severe actual cauterization was applied to the part, and the tumefaction treated with an application of ointment of bi-iodide of mercury. For a few days the parts were dressed with carbolic solution. The scar fell off, leaving healthy granulations, which, stimulated at times with pencil of nitrate of silver, soon healed, and made a complete cure,—*Clinica Veterinaria, Milan.*

PULMONARY CAUTERIZATION WITH FINE AND DEEP POINTS IN DOMESTIC ANIMALS.

From a series of experiments conducted by Prof. V. Lorge with the deep pulmonary cauterization, made with fine points, the following conclusions were arrived at:

1st. The penetrating fine pulmonary cauterization is perfectly harmless in the ox, the goat, the pig, the dog and the rabbit. It never gives rise to any hemorrhage in the pleura, nor to any appreciable pneumonia.

2d. The pulmonary wounds made with incandescent metallic points cicatrize with the greatest rapidity, and do not occasion pneumothorax.

3d. The actual pulmonary cauterization *in the horse* is followed by fibrinous pleurisy and pneumonia most characterized.

It remains to be seen if these experiments can be of any therapeutic value. The results must encourage their further trials. They might be of benefit in some forms of pneumonia or pulmonary tuberculosis. New experiments remain to be made to elucidate this important question. — *Annales de Medecine Veterinaire*.

REPORTS OF CASES.

CASES FROM A NOTE BOOK.

August 9th, 1879.

On the 18th of July I was called to attend a horse the property of Mr. Langstroth, of Bloomfield. The horse had been sick since the 15th, and was treated by a quack, for colic, getting in the three days laudanum, ether, aloes, croton oil and rochelle salts. I found the horse in considerable pain, raising the hind leg, looking at the flank, pawing and getting down gently, pulse quickened and rather hard, temperature 102°5 F., tender on pressure over the abdomen, and with total loss of appetite. Diagnosis, in-

flammation of the bowels. Prognosis, in view of the previous treatment and the nature of the disease, unfavorable. Treatment, small doses of tincture of aconite and rectal injections, soothing in character. (I dared give him nothing more on account of the rubbish the quack had put in him.) On the 20th, to my surprise, the tenderness on pressure had almost entirely disappeared, the horse showed no symptoms of pain, the pulse was slower and softened by the aconite, the temperature 102°, no desire for food, no passage of fæces. Treatment :

℞ Olen Lini, Ounce,
Pot. carb. ʒ ii,
Ext. bellad. plv. ʒ ii,
M ft. Haust.

the injections continued.

22d.—Condition unchanged. Thinking the retention of fæces might be due to gastric influenza, gave—

℞ Ammon. carb. ʒ i,
Cinchon. carb. pulv. ʒ i,
Ext. bellad. (solid.) ʒ i,
M. ft. bal. in X,

Dose.—One three times daily.

Continued the rectal injections and gave milk, eggs and whiskey as nourishment.

24th.—No passage, some return of appetite, passage of considerable mucous debris from the rectum, temperature 101°5. Continued treatment.

26th.—No passage, general condition unchanged. Treatment by advice of a professional friend,

℞ Ext. fld. verat. virid. ʒ i.

Give at once and follow in an hour by one and one-half pints of linseed oil.

28th.—No passage, return of symptoms of uneasiness, entire disgust of food.

30th.—Still no passage from the bowels, treatment as a last resort, an alætic purgative. August 2nd, death ; August 3rd, made a post mortem examination. Found all the viscera healthy,

but at the cœcal valve was a concretion about as big as a base ball, consisting of plates of calcareous matter, interspersed with a yellow granular debris, containing no nucleus, encapsulated by a zone of fibrous tissue about a quarter of an inch thick, and loosely adherent to the intestines, forming a veritable ball valve.

This horse lost no flesh, and there was no marked symptoms save when first seen, and near the close of life. Indeed, he looked so bright, that a casual observer would say there was nothing the matter with him.

I may add that his troubles were complicated during the latter days of life by perforation of the upper wall of the rectum by the nozzle of the syringe.

No. 2.—On the 8th of August, I was requested by Mr. C. C. Haley, of Newark, to go to Milburn, N. J., to make a post mortem examination on a horse.

The animal had been driven to Summit on the 7th, and when returning the driver noticed on nearing Milburn that the horse was breathing hard. He succeeded in getting him into the hotel yard, got off his harness, the horse laid down, stretched out, and died. Post mortem showed a rupture of the diaphragm admitting a portion of the stomach and intestines into the thoracic cavity. Part of this rupture was new, part old, the heart was large and showed intense inflammation in the right ventricle, the valves being the color and appearance of crimson velvet, the left ventricle showed no inflammation, but several black patches of extravasated blood under the endocardium, one very large at the apex of the largest fleshy column of the first order. The lungs were congested. My theory is that the inflammation of the right ventricle was due to the excessive work thrown on it by the difficulty in forcing the blood through the compressed lung. The stomach was in a condition of self digestion and showed a post mortem rupture.

THOMAS BLAGGE ROGERS, D.V.S.

CORRESPONDENCE.

JEFFERSON BARRACKS, Mo., }
August 4th, 1879. }

Editor American Veterinary Review:

DEAR SIR:—The article by J. C. Meyer, Sr., V.S., in your August number, concerning Army veterinary matters as they appeared to him during the late war, would suit a large part of the service to-day. Truthful as is this article, it is very unpalatable reading for a lover of the horse; for one naturally expects to see the horses in government employ cared for in the best manner—whereas, for some unexplained reason, the army has never made an attempt, till lately, toward the formation of a properly constituted Veterinary Department. This is very strange, when one reflects upon the enlightened liberality that is lavished upon all other branches of the service, surpassing in this particular, most other armies in the world. I am glad, however, to be able to show that this long-neglected branch of the service has been taken up by the authorities in good earnest, and that steps have already been taken to elevate it to a much higher degree of efficiency than it has ever heretofore enjoyed. This progressive movement was initiated by Quartermaster General Montgomery C. Meigs, and the result of his action in this matter will be seen in the liberal provisions contained in the enclosed General Order of the War Department, which goes into operation this month. In order to appreciate the improvement effected by the Supply Table contained in this General Order, in regard especially to the variety and quantities of the articles allowed, one would have to consult the Supply Table that is superseded by this one, which allowed but a beggerly assortment in stingy quantities, scarce anything that a cultivated veterinary surgeon could work with. It will be seen also, by consulting the above-mentioned Order, that hereafter, appointments as veterinary surgeons will be confined to graduates of veterinary colleges. Herein lies the essence

of the reform set on foot by General Meigs, for so soon as cultivated veterinary surgeons acquire the control of the management of the sick public animals, system will soon become manifest in sensible measures, not only for the proper and humane care of disabled animals, but also for the prevention of disease among them, and an end will be put to the ignorant butchery that has been practiced in the army by farriers, who for the most part, have had the charge of the sick public animals; this has been no fault of the farriers, who have worked with such lights as they possessed, but the fault of those who have had such matters in charge, and who are they? Strange enough, no one in authority that I have heard of has given this subject the amount of attention that it seems to me it deserves—attention enough to discover the fact that the horses of the American army require as much care as those of the armies of France, England and Germany, wherein I learn there is a regularly established veterinary department, as scientific and as well organized as the medical departments for the benefit of the men of those armies.

I am not in humor to go on any further with this subject at this time, but I think I have said enough to convince Dr. Meyer that there is a prospect of a solid improvement in the veterinary department of the army.

Very faithfully,

EDW. P. VOLLUM,

Surgeon, U. S. Army.

THE MILK WE USE AND THE SOURCE IT COMES FROM.

Editor American Veterinary Review :

The time is fast approaching when society at large will expect and demand more of the veterinary profession in the way of certifying as to the healthy condition of the animals slaughtered for their use, and particularly that the animals supplying us with so important and extensive an article of diet as milk, be properly fed, housed and of a healthy condition.

I have seen so much of late of the condition of the animals

that supply this city with milk, that, to say the very least of it, there is a great and immediate necessity for a radical reform.

When the smart and clean milkman drives up to your door with an elaborately painted wagon and silver-mounted harness, what a sorrowful contrast to the fountain head. True, many if not all of the local Boards of Health have clauses to the following effect in their by-laws : "That no person shall offer for sale milk from cows or other animals that have for the most part been kept in stables, or that have been fed in whole or in part on swill; or milk from sick or diseased cows or other animals; or butter or cheese made from any such milk." Now, to my mind, that covers the ground completely, but then it is a dead letter, for the very good reason that said Boards have no competent officers on their staff to regularly visit and examine these cows as to their physical condition. Doubtless the lactometer will detect the presence of water in the milk. But I have seen cows milked in this city in such a diseased condition, that the mixing of water with their milk would be the reverse of a crime.

If the milk from diseased cows is to be used as at present in our large cities, do away with your lactometer, and let our children at least have pure water. Neither the use of the lactometer nor the sealing up of the milk in glass jars in the dairies as it comes from the cow, is sufficient guarantee to the consumers of its quality.

Nothing but a periodical scientific inspection, (without fear or favor), of physical condition of dairy cows can remedy the present deplorable state of matters, and protect our children of all classes, who use milk so largely as an article of diet, not so much from watered milk, as to ensure its being the secretion of none but healthy animals. My remarks do not refer to any one particular disease, local or general. Had our general public an accurate conception of the diseased condition of the animals in our cities that supply their tables and families with milk, there would be an unanimous and immediate demand for reform. I trust some one better able than I will agitate this subject.

If you consider the foregoing remarks of sufficient importance to occupy space in your journal, I will consider it an honor.

BROOKLYN, August 18th 1879 D. M. McLEAN, V. S.

ARMY VETERINARY SURGEONS

GENERAL ORDERS } HEADQUARTERS OF THE ARMY.
 No. 36. } ADJUTANT GENERAL'S OFFICE.
 Washington, March 27, 1879.

I. The report of the Board of Officers appointed by paragraph 12, Special Orders No. 183, from this office, dated August 24, 1878, (organization modified by par. 7, Special Orders No. 211, from this office, dated October 1, 1878,) "to prepare and recommend a standard supply-table of veterinary medicines and instruments for use in the Army," having been approved by the Secretary of War, and its recommendations adopted, it is by his direction, hereby published for the information of the Army and for the guidance of all concerned, and will take effect from July 1st, 1879.

Requisitions and estimates for veterinary supplies will hereafter be made in conformity with the allowances provided for in the Standard Supply Table contained in the report of the Board.

JEFFERSON BARRACKS, Mo., November 15, 1878.

The Board of Officers convened at Jefferson Barracks, Mo., by virtue of paragraph 12, Special Orders No. 183, Headquarters of the Army, Adjutant General's Office, dated August 24, 1878, and paragraph 7, Special Orders No. 211, Headquarters of the Army, Adjutant General's Office, dated October 1, 1878, has the honor to submit the following report on the subject of "A Standard Supply-Table of Veterinary Medicines and Instruments for use in the Army."

STANDARD SUPPLY TABLE.

ARTICLES.	QUANTITIES FOR THREE MONTHS.							
	For Field Service.				For Hospital Service.			
	100 horses.	200 horses.	500 horses.	1,000 horses.	100 horses.	200 horses.	500 horses.	1,000 horses.
MEDICINES.								
Acid, Arsenious, (Arsenic) oz.	1	1	2	2	2	2	3	3
Acid, Carbolic, Crystallized oz.	12	14	16	32	14	16	32	64
Acid, Carbolic, for disinfection lbs.	2	2	4	8	2	3	6	10
Acid, Muratic oz.	8	8	16	16	16	16	24	24
Acid, Nitric oz.	4	8	12	12	8	8	12	16
Acid, Salicylic lbs.	2	3	3	4	3	4	5	7
Acid, Tannic lbs.	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Aconite, Tincture of lbs.	$\frac{1}{2}$	$\frac{1}{2}$	1	1	1	1	2	3

ARTICLES.	QUANTITIES FOR THREE MONTHS.							
	For Field Service.				For Hospital Service.			
	100 horses.	200 horses.	500 horses.	1,000 horses's	100 horses.	200 horses.	500 horses.	1,000 horses's
MEDICINES—Continued.								
Alcohol .....galls.	2	3	4	6	4	6	8	9
Aloes .....oz.	10	20	25	30	20	30	40	45
Alumina and Potassa, sulph., (Alum)..lbs.	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	2	$2\frac{1}{2}$	3	4
Ammonia, Acetate of .....lbs.	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Ammonia, Aromatic Spirits of.....lbs.	1	2	3	4	2	3	5	7
Ammonia, Solution of (Hartshorn)..galls.	1	2	3	4	3	4	5	6
Ammonia, Carbonate of.....lbs.	3	4	5	6	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$
Antimony and Potassa, Tartrate of, } oz. (Tartar Emetic.)	1	2	2	3	2	2	3	4
Atropia, Sulphate of.....oz.	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Belladonna, Alcoholic Extract of.....oz.	3	3	3	4	4	5	5	5
Blistering Liquid.....qts.	1	2	3	4	2	$2\frac{1}{2}$	$3\frac{1}{2}$	4
Borax.....lbs.	1	$1\frac{1}{2}$	3	4	2	3	6	8
Camphor.....lbs.	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Catechu .....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	1	1	2	3
Castor Oil.....galls.	1	2	3	4	2	3	4	6
Chalk, prepared.....lbs.	1	2	4	6	2	4	6	8
Chloroform, purified .....lbs.	2	3	4	5	3	4	5	6
Cinchona Bark, powdered.....lbs.	1	1	2	3	2	2	3	4
Cinchona, Fluid Extract of .....lbs.	4	5	6	6	4	5	6	8
Colchicum Seed.....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	$1\frac{1}{2}$
Collodion .....lbs.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	$1\frac{1}{2}$
Copper, Sulphate of (Bluestone).....oz.	2	4	4	6	4	4	6	8
Cosmoline, Veterinary .....lbs.	2	4	8	10	15	20	25	30
Ether, Sulphuric .....lbs.	4	6	8	10	4	6	10	12
Ether, Spirit of Nitrous, (Sweet Spirits } of Nitre.)	1	2	8	12	2	4	8	16
Flaxseed Meal.....lbs.	20	30	40	50	40	50	60	70
Ginger, powdered.....lbs.	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
Iodine .....oz.	3	3	4	5	3	4	5	5
Iron, Sulphate of .....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$
Iron, Tincture of the Chloride of.....lbs.	2	2	3	4	2	3	4	5
Jalap .....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Lead, Acetate of, (Sugar of Lead).....lbs.	1	2	3	4	2	4	6	8
Linseed Oil.....galls.	1	2	4	6	2	4	6	8
Magnesia, Sulphate of (Epsom Salts)..lbs.	16	24	32	40	24	32	40	48
Mercurial Ointment.....lbs.	1	2	3	4	2	3	4	5
Mercury Biniodide .....oz.	2	2	4	6	2	3	5	6
Mercury, Corrosive Chloride of, (Cor- } rosive Sublimate.)	2	2	3	4	2	3	4	4
Mercury, mild, Chloride of, (Calomel)..lbs.	1	$1\frac{1}{2}$	2	3	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Morphia, Sulphate of.....oz.	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Nux Vomica, Alcoholic Extract of.....oz.	3	3	3	4	4	5	6	8
Olive Oil.....galls.	1	2	4	6	2	4	6	8
Opium, Powdered .....lbs.	1	1	2	$2\frac{1}{2}$	1	$1\frac{1}{2}$	2	3
Opium, Tincture of, (Laudanum).....qts.	2	3	4	6	3	4	6	8
Pepper, (Cayenne, red,) ground.....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Potassa, Chlorate of .....lbs.	2	2	$2\frac{1}{2}$	3	2	$2\frac{1}{2}$	3	4

ARTICLES.	QUANTITIES FOR THREE MONTHS.							
	For Field Service.				For Hospital Service.			
	100 horses.	200 horses.	500 horses.	1,000 horses.	100 horses.	200 horses.	500 horses.	1,000 horses.
MEDICINES—Continued.								
Potassa, Nitrate of (Saltpetre).....lbs.	2	4	8	10	4	8	16	32
Potassium, Iodide of.....lbs.	2	3	6	8	3	4	8	10
Quinia, Sulphate of.....oz.	5	6	7	8	6	7	8	10
Rhubarb, powdered.....lbs.	$\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	2
Rosin.....lbs.	3	4	5	6	4	6	7	8
Silver, Nitrate of, crystals.....oz.	1	1	1	2	1	2	2	3
Silver, Nitrate of, fused, (Lunar Caus.) oz.	1	1	2	2	1	2	3	4
Soap, Castile.....lbs.	15	20	30	40	30	40	50	60
Soda, Bicarbonate of.....lbs.	4	6	8	10	4	8	12	16
Soda, Hypophosphite of.....lbs.	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	2
Sulphur, washed.....lbs.	1	2	3	4	2	4	8	12
Sulphur, in rolls.....lbs.	1	2	3	4	2	4	8	12
Turpentine, Oil of.....galls.	1	2	3	4	2	3	4	6
Zinc, Chloride of.....lbs.	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$
Zinc, Sulphate of.....lbs.	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
DRESSINGS.								
Bandages, 4-inch.....doz.	3	5	8	10	4	6	10	12
Catgut, carbolized, for ligatures,...yds.	6	8	10	12	8	12	16	20
Flannel, red, coarse.....yds.	4	6	8	12	8	12	16	24
Lint, patent.....lbs.	4	6	8	10	4	8	10	12
Oakum.....lbs.	30	35	40	45	35	40	50	60
Pencils, hair.....doz.	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	1	2	$2\frac{1}{2}$	3
Silk, ligature.....oz.	$\frac{1}{2}$	$\frac{3}{4}$	1	2	1	$1\frac{1}{2}$	2	4
Sponges, coarse and fine, each.....lbs.	1	2	4	8	2	4	6	10
Ticking, (muslin twilled).....yds.	5	8	12	16	8	12	20	30
Tubing, rubber, $\frac{1}{4}$ -inch.....yds.	.....	.....	.....	.....	3	3	4	8
Wire, silver, No. 26, for ligatures...yds.	6	8	10	12	8	12	16	20
INSTRUMENTS.								
Ball forceps.....no.	1	1	1	1	1	1	1	1
Bone-saw, small.....no.	1	1	1	1	1	1	1	1
Catheters, gum, with stylet.....no.	1	1	1	1	2	2	2	2
Cork-screws.....no.	1	1	1	1	2	2	2	2
Dissecting-case.....no.	1	1	1	1	1	1	1	1
Drenching-horn, (gutta-percha)....no.	1	1	1	2	2	2	2	2
Firing-irons, (point and line,) each..no.	1	1	1	1	1	1	1	1
Funnels, rubber.....no.	1	1	1	1	2	2	2	2
Funnels, tin.....no.	1	1	1	1	2	2	2	2
Foot instruments, (a set).....no.	1	1	1	1	1	1	1	1
Graduate glasses, glass, 6-oz.....no.	1	1	1	1	1	1	1	2
Graduate glasses, glass, minum.....no.	1	1	1	1	1	1	1	2
Hobbles, casting.....no.	1	1	1	1	1	1	1	1
Hones.....no.	1	1	1	1	1	1	1	1
Measures, tin.....set.	1	1	1	1	1	1	1	1
Needles, Surgeons'.....no.	12	12	24	24	24	24	36	36

ARTICLES.	QUANTITIES FOR THREE MONTHS.							
	For Field Service.				For Hospital Service.			
	100 horses.	200 horses.	500 horses.	1,000 horses.	100 horses.	200 horses.	500 horses.	1,000 horses.
INSTRUMENTS—Continued.								
Needles, for wire sutures.....no.	12	12	12	12	12	12	24	24
Panniers, to be filled from stock on hand—similar in make to those of the Medical Department.....	no. 1	no. 1	no. 1	no. 1	....	....	....	....
Pill-tiles,.....no.	1	1	1	1	1	1	2	1
Pocket-case. (See list).....no.	1	1	1	1	1	1	1	1
Post-mortem case.....no.	1	1	1	1	1	1	1	1
Probangs, 2 pieces of whalebone.....no.	1	1	1	1	1	1	1	1
Saddle-bags, Physician's, for small detachments. To be filled from stock on hand.....	no. 1	no. 1	no. 1	no. 1	....	....	....	....
Scales and weights, prescription.....no.	1	1	1	1	1	1	1	1
Scales and weights, shop.....no.	1	1	1	1	1	1	1	1
Scissors, curved.....no.	1	1	1	1	1	1	1	1
Scissors, straight.....no.	1	1	1	1	1	1	1	1
Slings, suspending.....no.	1	1	1	1	1	1	1	1
Spatulas.....no.	2	2	2	4	2	2	4	4
Speculum, mouth.....no.	1	1	1	1	1	1	1	1
Syringes, hypodermic.....no.	1	1	1	1	1	1	1	2
Syringes, rubber, 2-oz.....no.	1	1	1	1	1	1	1	2
Syringes, rubber, 8-oz.....no.	1	1	1	1	1	1	1	2
Syringes, rubber, 16-oz.....no.	1	1	1	1	1	1	1	2
Thermometer, clinical.....no.	1	1	1	1	1	1	1	1
Tooth-chisel.....no.	1	1	1	1	1	1	1	1
Tooth-forceps, large.....no.	1	1	1	1	1	1	1	1
Tooth-forceps, small.....no.	1	1	1	1	1	1	1	1
Tooth-rasps.....no.	1	1	1	1	1	1	1	1
Tracheotomy-tube, self-retaining....no.	1	1	1	1	1	1	1	1
Trephine.....no.	1	1	1	1	1	1	1	1
Urinometer.....no.	1	1	1	1	1	1	1	1
Blank-books, half-bound, 4 quires....no.	1	1	1	1	1	1	1	1
Memorandum-book.....no.	1	1	1	1	1	1	1	1
Ink, black, 2-oz. bottles.....botts.	1	1	2	2	2	2	2	2
Paper, filtering, round, 10-inch....pkgs.	1	1	1	1	2	2	2	2
Paper, litmus, blue and red, each.sheets.	1	1	1	1	1	1	2	2
Paper, writing, cap.....qrs.	1	1	1	1	2	2	2	2
Paper, writing, letter.....qrs.	1	1	1	1	2	2	2	2
Paper, writing, note.....qrs.	1	1	1	1	2	2	2	2
Pencils, lead.....no.	4	4	6	8	6	6	8	10
Pens, steel.....no.	6	12	18	24	24	36	42	48
Pen-holders.....no.	4	6	6	8	3	6	8	9
BOOKS.								
Laws, Farmer's Veterinary Adviser.cop.	1	1	1	1	1	1	1	1
Pharmacy, Parrish.....cop.	1	1	1	1	1	1	1	1

CONTENTS OF POCKET-CASE.

1 Three-bladed fleam.	1 Straight bistoury.
1 Scissors, flat.	1 Dressing-forceps.
1 Scissors, curved.	1 Porte caustic.
1 Artery-forceps.	1 Tenotomy-knife.
1 Long-shank probe-pointed bistoury.	1 Tenaculum.
1 Trocar.	6 Assorted drawing-knives.
1 Finger knife.	3 Lancets.
1 Seaton-needle, closing in handle.	16 Needles, straight.
1 Frog seaton-needle, in two parts.	6 Needles, half-curved.
1 Seaton-needle, in three parts.	1 Needle-holder (Russian).
1 Scalpel.	2 ozs. Saddler's silk.
1 Director.	1 oz. Silversuture-wire, No. 26 (about
1 Retractor.	18 yds. 1 ft. 10 in.)

Only the articles and the quantities thereof that are actually needed to be placed upon the requisition.

This table is believed to be usually ample and sufficiently varied for ordinary practice, but in order to provide for the necessities of epidemics and to indulge, as far as practicable, individual preference and training, a special requisition of articles not on the Supply Table, with an explanation of the nature of the emergency or case rendering it necessary, may be forwarded to the Quartermaster General for his action. Veterinary medical supplies and instruments, for hospital use, to remain in the hands of the Post Quartermaster, to be issued from time to time and in such quantities as are needed by the Companies. The instruments to remain in the custody of the Post Quartermaster. Post Quartermasters to take up all instruments and veterinary medical supplies, and report, when possible, to whose account they are to be credited.

A Veterinary Surgeon is to visit all the Companies of Regiments to which they belong from time to time, to instruct the Farriers and enlisted men in the proper and humane care of the horse, in order to the prevention and treatment of diseases; especially to teach the anatomy and pathology of the foot. He should illustrate his instructions by dissections and specimens, to show the nature and uses of all parts of the horse's foot, and he should also teach the principles and practice of horseshoeing. It would be economy to have a Veterinary Surgeon at every post where there are a considerable number of public animals, say four Com-

panies of Cavalry, or the same number of other public animals.

A room for the safe storage of veterinary instruments and medical stores and the compounding of medicines, should be provided, and the Veterinary Surgeons and Farriers should be encouraged to make and preserve collections of specimens obtained from *post mortem* examinations, illustrating the anatomy and pathology of the horse, in order to popularize and disseminate a knowledge of those important subjects in the Army.

The Board has endeavored to keep the numbers and quantities of the articles in the above table down to the minimum required for the proper treatment of the diseases of the horse, and it feels convinced that a more limited supply-table would not enable the Veterinary Surgeons to carry out the practice indicated by the most recent and advanced writers on the principles and practice of veterinary medicine and surgery.

In order to encourage thoroughness and system in the study and treatment of the diseases of the horse, as well as to furnish information regarding the management of the Veterinary Department of the Army, a monthly report of sick and wounded for each Company and Battery, similar to that adopted by the Medical Department, should be forwarded by Veterinary Surgeons and Company Farriers, through the Company and Post Commanders, to the Quartermaster General.

While the number of instruments recommended is less than can be found at any ordinary veterinary hospital in civil life in this country, still they are believed to be sufficient. The first cost for an outfit for the Army will be about \$25,000, which, under ordinary use and wear, should last for ten years.

It is believed that a great saving in the purchase of this outfit could be made if it were done by an officer familiar with the uses of veterinary instruments.

The panniers should, like those in use by the Medical Department, be so arranged as to contain only articles that are on the Supply Table. They should contain the articles of medicines in quantities allowed for 100 horses in field service for three months, and a pocket-case, ball-forceps, cork-screw, 6-ox. gradnate glass,

prescription scales, 2 spatulas, 16-ounce syringe, memorandum book, and 2 lead pencils.

Believing that a properly constructed and well arranged pannier would be of great service for Cavalry use, the Board will, if the Supply Table is approved, supervise the construction of a sample to guide the makers in getting them up. This can be done at the Cavalry Depot with the skill and material at hand. The accompanying form for Monthly Veterinary Reports is respectfully submitted.

C. GROVER,
Colonel 1st Cavalry, President.

EDW. P. VOLLUM,
Surgeon, U. S. Army.

E. B. GRIMES,
Captain, A. Q. M., Recorder.

(The form of Report submitted by the Board is added at the end of this order.)

II. At the headquarters, depots, or larger posts of Cavalry regiments, the standard supplies of instruments and medicines will be under the charge of the Quartermaster, to be issued by him to the smaller commands of the regiment in such quantities and of such articles as may be deemed requisite, conformably to the allowance fixed by the Standard Supply Table.

III. Hereafter appointments as Veterinary Surgeons will be confined to the graduates of established and reputable Veterinary Schools or Colleges. They will be appointed by the *Secretary of War*, in numbers not to exceed the legal establishment, and only on recommendation from the Commanding Officer of the Regiment, supported by the requisite proofs of learning and skill, and by approval of intermediate commanders.

IV. The visits of inspection and instruction by the Veterinary Surgeons will be made under the direction of the Commanding Generals of Departments and Divisions.

By command of General Sherman :

E. D. TOWNSEND,
Adjutant General.

Official :

Assistant Adjutant General.

MONTHLY VETERINARY REPORT OF SICK AND WOUNDED.

Station:, Month of, 18

Number of —Horses : Mules :; Oxen :—Total strength :

[illegible]

REMARKS.

DIRECTIONS.—Here make any necessary explanations and communicate any matters of interest with regard to prevailing diseases or sanitary condition of the animals. Interesting cases and autopsies should be communicated in full, either in this place or in an accompanying letter. In case a hospital is opened or closed during the month, it should be stated by whose order and on what day. When the command is moving, the station on the first and last of the month, and the route should be given. When possible, name the breed and stock of animals most subject to diseases, and state the diseases to which they are most liable.

No.	Horses.	Mules.	Oxen.	Corps or Reg't.	Co.	Disease or Wound.	Date of Death.

Monthly Veterinary Report
OF
SICK AND WOUNDED.

Station :
Month of, 18

FORWARDED BY

(Here give legibly the name
and rank.)

COMMAND.

(Here specify legibly the
name of the regiment and
the letters of the com-
panies comprising the
command, with the brig-
ade, division, and army
or department in which
it is serving.)

I certify that the above report is correct and true
to the best of my knowledge and belief.

(To be signed with the name and rank in full.)

VARIETIES.

FOOT AND MOUTH DISEASE.

In the House of Commons, in reply to Colonel Kingscote, Lord G. Hamilton said: "An outbreak of foot and mouth disease amongst American cattle at Derby was reported to the Privy Council, and an inquiry was immediately instituted. From this it appeared that a number of cattle were brought from Canada and landed at Liverpool, from the steamship *Dominion*. When landed they were twice inspected and examined, and were found to be free from disease. Eleven of them were purchased and sent on to Derby, and having been there found by the local Government inspector to be affected with foot and mouth disease, they were slaughtered. It is clear that the disease must have been contracted between the time they were landed and June 10th, because they were inspected in Canada before leaving, and had they then had the seeds of the disease, they would have developed it during the voyage. Certain cargoes of cattle were also sent from Liverpool to Nottingham, but on examination they were not found to be affected by disease.—*Veterinary Journal*.

A NEW VETERINARY SCHOOL.

The Iowa Agricultural College is about re-organizing its Veterinary Department, and we are told will establish a veterinary college in connection with the curriculum of agricultural studies. The faculty will consist of six or seven specially qualified professors, and we understand the new undertaking is to be supported by the Legislature of that great State. We will give notice of the course of studies as soon as we receive the announcement of the new school.

ABORTION IN COWS.

The steady increase of abortion in cows has caused a desire for a full and complete investigation into its cause, prevention and cure. In obedience to a resolution, the President of the Board of

Agriculture (Governor Hoyt), has appointed a Commission consisting of Isaiah Michener, of Bucks county; John P. Edge, of Chester county; Samuel W. Comly, of Montgomery county; and Watson P. Magill, of Bucks county, Pa., to act in conjunction with C. B. Michener, the veterinary surgeon of the Board, in an attempt to ascertain the cause and cure. The Commission are to report to Secretary Edge by November next.—*Farm Journal*, Philadelphia.

NEW DIRECTOR AT ALFORT.

Mr. A. Goubaux, the celebrated professor of anatomy at the veterinary school of Alfort, has been nominated director in place of Professor Reynal retiring.

SUCCESSOR TO CLAUDE BERNARD.

The Academie des Sciences of Paris has proposed as candidate to the chair of physiology, rendered vacant by the death of the illustrious Claude Bernard, in first rank Professor Henry Bouley, and in second place Mr. Rouget. Out of fifty-four votes, Mr. Bouley received thirty-two.

EXCHANGES, ETC., RECEIVED.

HOME EXCHANGES.—Proceedings of the Medical Society of Kings County, Medical Record, Hospital Gazette, Medical and Surgical Reporter, Country Gentleman, Scientific American, Scientific Farmer, Turf, Field and Farm, Ohio Farmer, Prairie Farmer, Practical Farmer, American Agriculturist, National Live Stock Journal, American Farmer.

FOREIGN EXCHANGES.—Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Clinica Veterinaria, Gazette Medicale, Revue für Thierheilkunde und Thierzucht, Archiv für Wissenschaftliche und Practische Thierheilkunde.

NEWSPAPERS.—American Cultivator, (Boston), New England Farmer, Western Sportsman, The Farmers' Review, The Chicago Times, Vermont Record, Western Agriculturist.

CATALOGUES.—Annual Announcement of Montreal Veterinary College, Annual Announcement of College of Physicians and Surgeons, Annual Announcement of Bellevue Medical College, The Vermont Agricultural Societies' Premium List, &c., &c.

COMMUNICATIONS.—F. S. Billings, Th. B. Rogers, L. McLean, E. P. Vol-lum, W. B. E. Miller.

AMERICAN VETERINARY REVIEW,

OCTOBER, 1879.

ORIGINAL ARTICLES.

HISTORY OF CONTAGIOUS PLEURO-PNEUMONIA IN NEW YORK.

BY J. D. HOPKINS, D.V.S.

Read before the United States Veterinary Medical Association.

Mr. Chairman and Gentlemen :

From reliable information we learn that in the year 1843 the "Lung Plague" was introduced into Brooklyn by a cow purchased by Peter Dunn, milkman, and kept in a stable near South Ferry. This cow was imported from Holland. She sickened and died in this stable, and infected the other cattle which were kept there. From this point, the disease was soon carried to the great distillery stables of John D. Winters, foot of 4th Street, and into the Skillman Street brewery stables. In these stables, as in similar cases in other countries, the disease continued to prevail, and nineteen years later was found in the Skillman Street stables by the Massachusetts Board of Cattle Commissioners, who, to satisfy themselves of the nature of the malady, verified their diagnosis

by slaughtering an animal and making an autopsy. This occurred in 1862.

In the year 1849, Wm. Meakin, of Bushwick, kept a large dairy, and used a yoke of oxen to draw grains from the breweries. One day while on the road he was induced to draw out a dead cow from a milkman's stable; from this the oxen became infected and the disease gained entrance into Mr. Meakin's dairy, resulting in the loss of forty head in three months. Here the malady prevailed for twenty years, or until Mr. Meakin left the business. This covers thirteen years of the period that the disease was known to exist in the Skillman stables and seven years subsequent to the visit of the Massachusetts Commissioners, and brings us down to 1869. In 1868, Prof. John Gamgee investigated this disease in the United States, and found it to exist in various parts of Long Island. In the year 1870, W. D. Sanger of Bayside, L. I., by the purchase of a black cow from a dealer, had his herd infected with this pestilence and lost 90 animals out of 150 in one stable, and sixty out of 130 in another, within a period of twenty months.

The continuous existence of the disease is thus shown from 1843 to 1872, on Long Island; but it was not confined by any means to Long Island alone, for so long ago as 1850 Mr. Bathgate of Morrisania had his Jersey herd infected, and all efforts to eradicate it failed until some years later, when the barns burned down. And so prevalent was the disease in the vicinity, that for many years afterwards Dr. Bathgate was afraid to pasture his own lots adjoining the streets, lest his stock should again contract the plague from diseased cattle running on the commons.

Seven years ago the trouble was brought into the herd of Joseph Schwab, of 149th Street and Southern Boulevard, by a cow bought of a dealer; here twenty-three died and only seven recovered(?). Within the last seven years most of the large dairies in the suburbs of New York City have suffered from invasions of this disease. As notable instances of this, we might mention those of Patrick Green, Frank Divine, Emery Hill and his brother, Horace K. Hill, Geo. McKittrick, Mr. Trot and many others.

To explain the great extension of this disease within the last few years, it will be necessary to enter into some details regarding the peculiarities of the cow trade as carried on in this vicinity before Gen. Patrick's appointment.

The fresh cows arrived in New York by boats on the Hudson River from this State and from New Jersey, and by railroad from northern and western New York, New Jersey and Pennsylvania, and were sold on the docks and at the railroad yards by speculators to dealers and transferred to the stables of the latter. The business between the dealer and the dairyman is almost invariably done on credit, the frequent losses of the dairies making it next to impossible to get sufficient means ahead to pay cash.

The dairyman in need of a fresh cow applied to his dealer and was furnished one on trial, represented to be in possession of all good qualities and a deep milker. A couple of weeks later this cow would be returned to the dealer, not proving such a milker as warranted, and she was placed once more on sale in the dealer's stable, mingling with his other stock. In many instances the dairy in which this cow had been tried had lost cows from *pleuro-pneumonia contagiosa*, and was consequently an infected place.

We have now an infected cow transferred from an infected place to cohabit in a dealer's stable with cows offered for sale, conveying the contagion both to them and the stable. Now this lot of infected animals was sent out, as opportunity occurred, to other dairymen on trial, contaminating all susceptible animals with which they came in contact. Disease and death followed the trail of this pernicious system.

Another phase of this business was the peddling of cows on the roads by dealers, and many a herdsman has bitterly repented the buying of such animals and placing them in their own healthy herds. An instance of this may be cited with profit. In 1872 Frank Divine, of Old Farm House Hotel, Westchester, N. Y., bought a cow from a peddler passing his farm, which soon sickened and died, the disease extending to the rest of the herd, and in seven months he lost thirty-six cows from pleuro-pneumonia. Many stories of a like nature have been told me by the sufferers

in New York and Westchester counties within the last six months.

Another means of spreading the disease was the custom of small dairies of pasturing their cows on the commons. Here herds belonging to different individuals grazed innocently together, and it has been my lot to detect the disease and trace it to this source, and even to find the affected animals on the commons. The people, of course, wondered how their cows contracted the disease.

You can now fully understand, gentleman, how easily this disease is transmitted from stable to stable in New York and Brooklyn—how from one or two original centres of contagion it has been disseminated until now it has assumed such proportions as to be almost a national calamity.

The authorities of New York State until quite recently, took no notice of the existence of the disease in our midst, although repeatedly warned by veterinarians and the press.

Some years ago Frank Leslie, publisher of an illustrated newspaper, called the attention of the public to the diseased condition of cows kept in swill stables, then located between 15th and 16th Streets, near North River, and also those in Brooklyn, influencing popular opinion to such an extent that many of these stables were abolished. His apt illustrations and the humor of his caricatures obtained for the vendors of milk from these stables the sobriquet of "stump tails," from the fact that most of the cows had lost a portion of their tails.

Later, Henry Bergh, President of the American Society for the Prevention of Cruelty to Animals, has since the organization of his society waged war against the inhuman practices of cow owners. These gentlemen made public the condition in which cows were kept, and though powerless to remedy the evil, if indeed, they recognized the true root, viz: pleuro-pneumonia, did much to relieve the condition of the bovine family, and deserve the lasting gratitude of residents of New York and Brooklyn.

Many eminent pathologists wrote to our legislators at Albany and Washington without being able to enlist any action in the matter.

In the year 1868, Prof. John Gamgee, under an appointment of the General Government, made an official examination in the

United States, and in the fall of 1869, made an exhaustive report to the Commissioner of Agriculture at Washington, in regard to the history of this disease in European countries and of its existence in Long Island, New Jersey, Pennsylvania, Maryland, District of Columbia and Virginia, advising strong measures for its extirpation, and in the same report prophesying what the result would be unless the Government took active steps to stamp it out.

Prof. Gamgee's report was printed and placed in the hands of our legislators at Washington, still nothing was done by the Government.

The disease continued to make havoc in this country till, coming to the knowledge of the English authorities, through an article published in the *New York Tribune* for November 27th, 1878, from the pen of Prof. Law, and the subsequent discovery of diseased American cattle on board the *Ontario*, Prof. McEachran, of Montreal, was directed to investigate and report to Canada. You all, gentlemen, know the result of that report: American cattle were refused, not only by England but by other European countries. This is a matter of history.

The United States had a rude awakening—we could see Europe supplied with cattle from Canada, thereby diverting from our own country millions of dollars, and New York City being the port from which most of the cattle are shipped, the authorities of this State at once took measures to relieve herself of this foul incubus.

Wise counsels and clear heads at Albany came to the rescue at this crisis. Governor Robinson called to the front Gen. M. R. Patrick, a gentleman of great experience in bovine matters, whose executive ability in 1868, while acting as Commissioner of Cattle saved this State from being overspread by an epizootic of splenic fever. (See report to Legislature, March 12, 1869).

At General Patrick's wish, James Law, Veterinary Professor at Cornell University, was appointed to direct the professional part of the work in stamping out this plague.

On the 13th day of February, 1879, the commission met in Brooklyn, organized an efficient staff and at once proceeded to the business at hand. Work was begun immediately in the

Blissville distillery stables, containing 879 milch cows. Those that had the disease in the acute form were destroyed and sent to the offal dock, while the balance were sent to the butcher, not a hoof being left to carry the pestilence.

A great deal of opposition was raised by parties interested in the diseased animals, and at times but for the firmness of our executive, the lives of the veterinary staff would have been in danger.

To carry on the work effectually it was necessary to issue such regulations as would completely control the traffic in cows and store cattle, and lead to the discovery of all infected premises. To this end the introduction of such animals from infected districts, viz. : New Jersey, Eastern Pennsylvania, Delaware, Maryland, District of Columbia and Virginia, was prohibited, as well as the movement of the same from the infected to the healthy districts within our own State.

Of course a critical examination of all stables in the infected districts was at once commenced ; but this alone was not sufficient, for it was highly important to discover immediately the stables in which the disease already prevailed, that its spread from them might be at once prevented. For this purpose careful post-mortem examinations were made at the offal docks daily on all cows, so that no deaths from this disease escaped our knowledge, and the slaughter of fat cows at the butcher's was even done under the supervision of our inspectors.

Pasturing on the commons was strictly forbidden and the law on the subject extensively advertised, and no cows allowed to move on the streets unless accompanied with a permit bearing the autograph of General Patrick, to obtain which a previous inspection was required.

By the generosity of the Union Stock Yard and Market Co. in their desire to encourage and protect the business, extensive yards and sheds were built at 59th Street and North River. A new era dawned on the cow trade. Gen. Patrick brought the lines closer and closer as he felt the traces drawing. Opposition from interested parties, those who rebelled through ignorance, or the authorities that failed to do their duty, were each met in his turn by our executive and shown their proper course. Railroads,

steamboats and barges bringing store cattle to the New York markets, were compelled to land them at our yards for inspection and distribution.

Orders were promulgated prohibiting dealers from keeping cows on sale in their own stables or moving cows from one stable to another, effectually doing away with all peddling. The great step was now attained and movement of cows simplified to going from the yards to the stables and from the stables to the slaughter houses. Gentlemen, you can easily imagine that New York and Brooklyn are practically in a state of thorough quarantine.

Now, if you will add to these rules the liberal indemnity allowed by the State for such diseased animals as are reported, you can see how little is to be gained by any dairyman concealing the existence of the disease.

But the establishment and enforcing of these regulations has not been a work to receive, as one might suppose, the hearty co-operation of our leading agriculturists, our agricultural press, or even of all the members of the veterinary profession. From the very first, the journal, which in our State stands highest as an exponent of live stock interest, has taken every opportunity to throw doubt on the existence of the disease. The executive committee of the New York State Agricultural Society, even after the infected district had been very accurately marked out by the labors of the veterinary staff, passed resolutions to give publicity to their opinion that there were grave doubts in regard to the contagious character of the malady as it exists in this State. But worse than all, gentlemen, was the opposition that came from members of own profession—from men holding the diplomas of leading veterinary institutions, to whom the public looked for sound advice based upon thorough professional knowledge.

The opposition of quacks and cattle dealers need not be mentioned; it was expected, and treated with that contempt which at once consigned it to oblivion, but the disaffection of the press, the Agricultural Society and members of the profession could not be so easily passed over in silence. A wise policy of public post mortem examinations, however, to which the most noted critics of our policy were invited, and the publication of typical cases

of contagion in large number, have, we believe, completely disarmed our opponents, and left us, for the present at least, in comparatively quiet possession of the field.

The same fortunate result has not yet been arrived at in other States, and in the majority of those which are infected there is still a deplorable contest over the nature and existence of the disease. As a result nothing is done, the danger continues and the malady is spreading; and this state of things has, as can readily be seen, a considerable influence on the time required for the completion of the work in this State and our safety in the future.

A word about the stamping-out process. Criticism will always follow the appointment of a commission to perform such important work, even though the selection is made because of special qualifications; but I am sorry to see young men, ambitious of notoriety, whose experience extends little beyond the four corners of a school room, criticising competent and conscientious men, who have on hand a work greater than these would-be critics can appreciate, and who have to encounter obstacles which are unknown to such lookers-on.

If our friends would only give the State Commissioners credit for possessing intelligence and a natural desire for the success of their work, they would not need to be informed that there may be good reasons for carrying out the work exactly as it is being done.

It is possible for pleuro-pneumonia to be exterminated in other ways than going with a torch in one hand and a pole-axe in the other, arousing opposition on every hand and raising a disturbance entirely out of proportion to the work performed.

This most insidious foe, pleuro-pneumonia, because of its long period of incubation, must be met by the guarded quarantine, blocking the avenues of traffic, thoroughly disinfecting the centres of contagion and destroying *diseased* animals. The people must be made acquainted with the laws on the subject, and in my experience I have found my greatest allies among the intelligent herdsmen, who, understanding what was required of them, failed not in their duty.

From April 4th to September 12th, this year, there has arrived in New York 4,812 fresh cows, all of which have been critically examined. And within the same time 1,083 cow stables, containing 4,749 cows, have been inspected in New York City, of which 67 stables, containing 470 cows, have been found infected and quarantined, and 110 cows have been found suffering from pleuro-pneumonia and slaughtered, on all of which autopsies have been made in the presence of medical gentlemen from the Health Boards of New York and Brooklyn, nearly all the veterinary surgeons of New York, and many eminent physicians.

Up to this time only \$35,000 in all has been appropriated, and of this but a small balance remains, without a prospect of more until the next meeting of the Legislature. It is to be regretted that after so much work has been done, and complete success almost within our grasp, we should find our work hindered by the diminution of our pecuniary resources. Under these circumstances our executive has been compelled to dispense with the services of some experienced and valuable inspectors, and to otherwise reduce expenses to the lowest possible limit, so that the good work already done can be held until the next meeting of the Legislature.

The result thus far has been exceedingly gratifying to those in charge of the work. Stables which might well be called pest houses, have been transformed, the number of infected places has been greatly diminished, and, unless the short-sighted policy of our legislators compels a discontinuance, the success will be speedy and complete.

But how unsatisfactory will even this result be if neighboring States are allowed to harbor this pestilence. Not only will we be obliged to keep up our inspection of incoming animals, but we will be in continual danger of fresh outbreaks from cattle infected on cars, which are admitted while in the period of incubation.

Again, the extermination of the disease in this State cannot rid our foreign trade of its present restrictions, while it is well known abroad that it still prevails over such a large territory. The danger from pleuro-pneumonia and the benefits of the cattle trade are not restricted to any State or section; they are matters of national

interest and national importance, and we cannot escape the conclusion that they should be met by a national policy. There is but one means by which our country can soon rid itself of the stigma which the presence of the lung plague has placed upon it, and that is by a national appropriation expended under uniform regulations.

As you well know, a great obstacle to Congressional action exists in the opposition of men of intelligence and influence, who have formed erroneous opinions of the prevalence and nature of the pleuro-pneumonia of this country. An explanation of such opinion can, of course, be found in the loud-mouthed course taken by so many quacks and imperfectly educated veterinarians. But an expression of views by the United States Veterinary Medical Association could not be lightly passed over; it would carry a weight with it which would prove of the very greatest assistance in placing our Government right before the world.

I therefore beg leave to offer the following preamble and resolutions :

Whereas, such able veterinarians as Prof. Law of Cornell University, Ithaca, N. Y.; Prof. Liantard, of the American Veterinary College, Prof. Gamgee of London, Prof. McEachran of Montreal Veterinary College and Dr. E. F. Thayer, of Boston, have recognized the existence of contagious pleuro-pneumonia in the United States, and mapped out the infected districts, viz.: New York, New Jersey, Pennsylvania, Maryland, District of Columbia and Virginia; and

Whereas, The presence of this disease in our midst has almost destroyed our export trade in live cattle (worth millions annually), by the refusal of such cattle in foreign markets; and

Whereas, The inaction of our authorities caused the 40,000,000 of cattle in this country to be threatened with this pestilence; and

Whereas, The eradication of this plague is a matter of national importance, affecting the welfare of the whole United States, and requiring uniform regulation for its accomplishment ; therefore be it

Resolved, That we, members of the United States Veterinary

Medical Association, at our annual meeting, held September 16th, 1879, at the American Veterinary College, do ask that our General Government take active measures for the extermination of the plague before its further extension makes this impossible; and

Resolved, That Congress be asked to establish a special commission at the most central point to direct the movements in all the States, said committee to consist of an executive (non-professional), with a chief veterinary surgeon, and a staff organized under their direction; and

Resolved, That Congress be asked to make an appropriation of \$2,000,000 to defray necessary expenses.

Resolved, That our Secretary make a copy of these resolutions to be signed by the members of this Association, and presented to the Secretary of the Treasury, Washington, D. C.

LACERATION OF THE FLEXOR METATARSI MUSCLE.*

BY A. LIAUTARD, M.D., V.S.

Mr. President and Gentlemen :

A few months ago a friend of ours, Dr. Lockhart, had the opportunity to call my attention and that of several amongst us to a horse which presented the following peculiar symptoms : Standing firmly in his stall on all fours, when moved he would drag his off hind leg, and when carrying it forward the tendo Achillis would appear entirely relaxed and no flexion whatever took place at the hock. There was some swelling about the hock and some soreness on pressure. My diagnosis was made of injury to the flexor metatarsi, and I located the injury at the lower extremity of the muscle. The animal was placed under treatment. I believe both ends, that is, the stifle as well as the hock, received attention, and I understand the horse got well. At first I must confess, that the idea of the treatment being applied at both extremities of the muscle seemed to me quite singular.

A few days afterwards, again through Dr. Lockhart, I had

Read before the United States Veterinary Association.

another opportunity to see a similar case which, however, was of longer standing, and properly speaking, convalescent. If my memory serves me right, he had run away, sustained several superficial cuts in the tibial region, and when I saw him also presented much thickening in the region of the hock. His action was somewhat similar to the first case, but in a milder form. I believe this case also got well.

A short time later it was my fortune to see another case in my own practice. A large gray gelding, belonging to a malt house, after pulling a very heavy load was found the next morning unable to flex his hock, dragged the toe of his off leg in walking, and in that action had also the tendo Achillis much relaxed. In his case there was no wound, no swelling, no pain in the whole extent of the tibial region of the flexor metatarsi. The horse was placed in slings only, and three weeks after resumed his work without any apparent thickening in any part of his leg. These three cases I have placed on my note book as ruptures of the flexor metatarsi.

I have seen lately a black gelding belonging to a stable keeper in Bleecker and Mercer Streets, who presented the same symptoms, and was also seen by Dr. Lockhart and Mr. Budd. He was blistered along the tendo Achillis, kept in slings for seven weeks, and to-day presents no mark whatever of his injury, which he had inflicted on himself by slipping backwards while in harness.

On the 3d day of April, I was called to see a large bay gelding belonging to a brewery of this city, who had worked up to that day, had pulled his ordinary load the day previous, and on the morning was found in exactly this same condition, the relaxation of the tendo Achillis being, perhaps, a little more marked, as also the difficulty of locomotion. No pain, no soreness whatever in the whole length of the tibial region, no swelling at the stifle, along the muscle nor at the hock. The same diagnosis was made—laceration of the flexor metatarsi. When brought to the College for treatment the question presented itself to my mind, Where shall I apply my external application, at which end of the muscle, or in the middle? Close examination failed to give me any hint, and I decided to have recourse to the same treatment as that I found so peculiar, and which had been followed

by Dr. Lockhart. A good blister was applied over the stifle joint and one all round the hock, the horse was placed in slings and immobilized as much as possible. After four weeks of this treatment, the blisters having produced all their effects, and the scabs cleaned off, the animal on being relieved of his slings, backed out of his stable and walked a few steps; judge of my disappointment—there was not the slightest improvement. The actual cantery in deep fine points, with severe blistering, was applied to the hock, principally in front, and a good blister reapplied over the stifle; another month allowed to pass—another disappointment. At the beginning of the third month a third blister was applied over the hock only, and at the end of this ninety days' treatment, I was no farther advanced. My patient walked just as badly. I kept him a few days longer, and about one hundred days after the first visit he was destroyed.

It is unnecessary for me to tell you that I had made up my mind to hold a careful examination. The three first cases related and this last were the only ones I had seen in this country, and though the diagnosis made was correct, it was incomplete, and the fact of being incomplete rendered the treatment uncertain. I had given orders to my assistant to have the leg severed from above the stifle, the amputation to be made at about the lower third of the femur, and thereby securing the two attachments of the muscle. Through some misunderstanding, however, the leg was cut off in the bone yard, about the middle of the tibia, and thus we lost one of our opportunities, and the post mortem was incomplete. However, Dr. Coates took hold of this part of the leg and made a careful inspection of all that remained of the flexor metatarsi muscle. With the exception of some serous exudation in the cellular tissue, the entire structure proved healthy, and the fleshy as well as the tendinous portions, with their four lower insertions, were entirely free from disease.

The literature on this subject is somewhat incomplete, and it is for that reason that I take to-day the opportunity to present you with these few remarks.

Percivall, in his valuable work on lameness, mentions two cases, one which recovered and resumed his work after two months, and

which he said was probably "due to a rupture of the flexor metatarsi muscle or its tendon, and most likely to the latter." In this case, besides the characteristic motion, "there was soreness in front about six inches above the hock, and also a little higher up, and the usual tenseness and distinctness of the tendon could not be seen. There was no apparent pain of any importance. The second case was after three weeks of *treatment* pronounced *incurable*.

Prof. Williams, in his work on surgery, under the heading of sub-cutaneous laceration of the flexor metatarsi muscle, reports the history of a case in an old horse which presented the same symptoms, and which on account of his age was destroyed. At the post mortem, writes Prof. Williams, "it was discovered that the flexor metatarsi was lacerated across its *whole thickness*; its fibres were pale and when examined under the microscope their transverse striæ were nearly, and, in some places, entirely absent, showing that the sarcois elements were undergoing degeneration."

Gonrdon, in his *Chirurgie Veterinaire*, says, "that the tendinous cord of this muscle may give way after violent efforts." * * * and again, "this affection gets well spontaneously in the majority of cases;" but few observations of the seat of the rupture have been made. Bonley jenne has seen it at a point corresponding to the middle portion of the tibia, and Goubaux has found it at the point of attachment in the cavity of the femur. The treatment, he says, may vary from six weeks to two months.

The May number of the *Archives Veterinaires* of this year contains an excellent resumé of the statistics of the lesions of that muscle, showing that 21 cases due to the rupture of this flexor metatarsi are found on record. The causes are divided as follows :

In two observations while the animal was secured in stocks to be shod.

One after a fall while being shod and held in the usual manner.
One during the same operation, and by the resistance only of the man holding the foot during the violent efforts of the horse to free himself.

Five after kicking backwards, and the legs of the animal being held in the shafts of the wagon.

Four by slipping or falling with the leg extended backwards.

One by a weight falling on the lumbar region, under which the animal had given way.

One by muscular contraction, the animal being cast and secured for an operation.

Three observations with ætiology unknown.

Three observations with ætiology incomplete.

Of the post mortem the writer, Mr. Carnet, says that Mr. Bouley jeune, reporting a case which took place at the school of Alfort, found that "the cord of the muscle was ruptured in its totality, on a level with the diaphysis of the tibia;" also "Mr. Goubaux found that the tendon, common to the extensor pedis and the flexor metatarsi, was found ruptured at its origin in the inferior cavity of the femur."

The question of the prognosis is said not to be serious, as after fifteen to twenty days there is a notable improvement, and a complete cure after fifty or sixty days of the twenty-one cases recorded.

The cure was obtained before the 40th day in 4 cases.

"	"	"	between the 40th and 50th day in 4 cases.
"	"	"	" " 50th and 60th " 7 "
"	"	"	after " 65th " 2 "

One case was destroyed from an error of diagnosis, two for other causes, and one as incurable.

By the above remarks you can see that the question of the true seat of the lesions remained somewhat doubtful even with such high authorities, though probably all are inclined to locate it in the tendons principally.

Percivall says "the flexor metatarsi muscle or its tendon, and most likely the latter." Prof. William reports "that the flexor metatarsi was lacerated across its whole thickness." Gourdon places it "in the tendinous cord of the muscle." Bouley jeune and Gouleanx in the tendon. Yes; but what part of it? This question I have tried to solve by experiment.

In the month of August, on an old animal bought for that purpose, I divided sub-cutaneously the cord of the tendon of the flexor metatarsi of the off leg a little below its passage through the groove between the external and anterior tuberosity of the superior extremity of the tibia, being very careful to cut the tendon only, which can be easily found free from its muscular connection. When allowed to get up, the animal presented all the manifestations observed in all the cases I saw.

Some two weeks later he was thrown down, on the off side, and another experiment made on the near hip. An incision was made on the outside and a little in front of the tibia, the anterior extensor pedis drawn forward, the lateral extensor of the phalanges pushed outwards, the tendon of the flexor metatarsi well exposed and division made down to the bone of the widest and thickest portion of the fleshy part of the muscle. Some hemorrhage followed from division of the anterior tibial artery—the wound was closed by several stitches, and the animal allowed to rise. When walked away from his bed, his action was perfect; the leg was carried forward without any trouble, the hock well flexed, there being no alteration in his gait, except on the opposite leg, which had been operated on two weeks previous.

The animal is brought back to the bed, thrown down again on the off side—another incision made just above the tibio-tarsal joint, the tendon of the anterior pedis is well isolated, and then the entire structure of the muscles, which is there mostly tendinous, the two portions being on the point of subdividing into their quadrifications, is entirely divided. The animal is made free and allowed to get up.

The manifestation of the symptoms is then immediate; the animal drags his toe with much difficulty, knuckles considerably at every step he takes; the relaxation of the tendo Achillis is somewhat more marked than in the other leg, where the muscular portion has been left intact, and by its union to the tendon is able to transmit to it some of its power. When turning round on the near leg, the one lately operated on, the action is more difficult than on the other, the leg being carried more in adduction. Still the standing is firm on both legs, and when in his stall the animal seems in perfect health as far as his legs are concerned.

From the above experiments I beg to present the following conclusions :

1—The rupture of the fleshy portion alone of the flexor metatarsi will not give rise to the symptoms of the cases reported.

2—The rupture, laceration or division of the tendinous portion alone in its upper part, from its origin to the point of union with the muscular fibres, will give rise to the difficulty of flexion at the hock.

3—The rupture or division of the lower portion of the muscle, or of any part of the muscle where the tendons and muscle are united, will also give rise to the same symptoms, but probably more marked, with greater difficulty of flexion at the hock, and impaired co-ordination of the movements.

I do not know if, by these remarks, I have been able to elucidate the question of diagnosis. I think, however, that some conclusion can be arrived at: first, that, if the lower part is the seat of the lesion, some swelling of that region, heat and probably pain on pressure will be detected better than when the upper tendon alone is divided. Second, that the irregularity of the action will be more marked, there will be some adduction, and the motion of turning will also be rendered more embarrassed, the leg affected becoming entangled with the other, and if these conclusions are correct, the indication for treatment will also be made more manifest.

EDITORIAL.

CRITICAL PERIOD IN AMERICAN VETERINARY HISTORY.

Amongst all the professions there is probably none whose dark ages and progress have been more closely watched than the veterinary profession. The history of scientific Europe has made all acquainted with the different stages through which this noble branch of the art of healing and of agriculture have passed, and to all observers in that direction it must be evident that in America veterinary science has reached one of its most critical periods.

Some twenty years ago the practice of veterinary medicine was almost entirely in the hands of empirics. Here and there in the large cities one or two educated veterinarians might have been found; but the great majority of those who attended our domestic animals were ignorant men, many of them unable to read or write and entirely unfit for the calling they were following. In those days the requirements of the horse doctor, cow leech and others were limited, and their standing as scientific men was of course entirely ignored, without saying anything of their social position, which, for many, was a superfluity. Should anyone have spoken to these pretended practitioners of sanitary science, of the connection of their duties and knowledge to human medicine, of the necessity of their action in case of epizootics, of the noble work they might be called to perform, no doubt it would have been to them a great surprise; though perhaps some of them might have been applied to, so ignorant of the requirements were the public at large. Again, what did those men know of *jurisprudence*, a word they certainly never heard? And when called in the practice of that branch of their specialty, the tradition of their doubtful integrity in the matter has been handed down to our days, and, we fear, may remain attached to the profession as a stigma which only years of excessive probity will remove.

But if the observer will turn his attention to our own day and see the difference which exists, how gratifying the prospects will appear to him.

First, the establishment of veterinary schools and with them the sending over the country of men, who, if not possessed as yet of the amount of science which is obtained in much older European institutions of the same kind, have in them the foundation to obtain it by their own work, and certainly have the elements that go to make good practitioners. With the number of educated veterinarians increasing, there came amongst them the desire of social and scientific intercourse, and soon veterinary societies were formed, amongst which the United States Veterinary Medical Association is one of the oldest. Though this was progress, something was wanting; that by which all members of the profession

might correspond with each other and exchange opinions on subjects interesting to them, to the profession and to the country—so the American Veterinary Review was founded.

Soon contagious diseases were found to have obtained a foot-hold on our continent; diseases of horses, cattle, sheep, and swine threatened not only the life of our animals but the wealth of our people, and of the nation. Then the veterinary sanitarian was called to duty. Veterinary Cattle Commissioners were appointed, and to-day our people are well aware of the good work that our friend E. F. Thayer has done in Massachusetts; and they will soon be able to judge of the one which is carried on now by Prof. James Law of Cornell University and his staff of educated veterinarians. Years ago none would have thought that a “horse doctor” knew anything but to bleed, to give a ball or sell some condition powder; to-day we find our Agricultural Societies calling upon our graduated veterinary surgeons to deliver addresses on the subjects pertaining to our profession.

In the presence of these vast changes the question may arise, why have they taken place? The answer is simple; because the interests of the people demanded it. But this is not all; our General Government is doing away with its farriers and horse doctors by requiring that hereafter appointments as Veterinary Surgeons in the army shall be composed of the graduates of established and reputable veterinary schools or colleges.* They at last realize what the requirements of the veterinarian are, and what may be expected from one, whose education has been perfected in that direction.

If we say that our people only *begin* to realize these facts, it is because we do not think Americans *fully* appreciate them, for if they did, we have no doubt they would take steps to place veterinary science on the same footing it holds in Europe. But this we look upon as another crisis in the history of veterinary medicine in America.

We must not ignore the fact, however, that besides the educational advance made by the people, the changes which have

* The American Veterinary Review, September number, 1879.

taken place in the personnel of the veterinarian has had much to do in rehabilitating the profession in the eyes of the public. But the work is not finished. To maintain our progress much has yet to be done, and it remains in the hands of the veterinarians of to-day to push upward and onward their heretofore ignored and depreciated profession. Petty jealousies and personal motives must not be allowed to overcome the great work at hand. All must work unitedly with their shoulders to the wheel.

Veterinarians of America, veterinarians of to-day, look back at what your profession was twenty years ago, then look at what it is now. Do not rest on this improved condition, grand as it is, but push forward with all your energy and make your noble art equal if not superior, to what it is in Europe.

CORRESPONDENCE.

Our correspondents' list was so overloaded in our last issue that the publication of important letters had to be postponed to this number. Among them, is one from Dr. L. McLean, which we would have been pleased to print last month, had it reached us sooner than it did.

A letter from Dr. Miller reports a peculiar case; the specimen accompanying it has been placed in the museum of the American Veterinary College.

We also publish a letter from a veterinarian in the army. The subject of army Veterinary Surgeons is one which we will take up in subsequent numbers of the REVIEW. The position of our colleagues in the army ought to be looked after, no matter how few of them there may be.

The answer to a student will appear in our next number.

ARMY VETERINARIANS.

We begin to-day the publication of official documents relating to the rank and pay of Veterinary Surgeons in the armies of Europe. The new Royal Warrant of the Army Veterinary Department in England is printed in this number of the REVIEW, and will be followed by similar ones from France, Germany and Italy.

We will conclude this series of articles by an appeal to our Quartermaster-General in behalf of our army brethren, satisfied by what we have already seen of the interest he takes in the matter, that he will give us his kind attention on a subject so important and so advantageous to the efficiency of our cavalry.

ITALIAN VETERINARY CONGRESS.

We would call the attention of the members of the profession to the translation of the programme which we have received. The work laid down for that body of Italian veterinarians is one which might be very advantageously followed by our friends of the United States Veterinary Medical Association. Why don't the President of that honorable body, with the different committees he has at his disposal, get up such a programme for subsequent meetings. The reading of private papers, of prize essays, with the presentation of specimens, is all very good, no doubt, but are we so thoroughly perfect and organized that the questions which have been discussed in Germany and in France years past, and a few days ago in Italy, can be ignored by us in our young life?

A NEW DEPARTURE.

It was decided at the last meeting of the United States Veterinary Medical Association that the subscription for the REVIEW be reduced to \$3.00 a year for veterinary students only, as long so they are in college. Any new subscriber to the 4th volume, beginning in April, 1880, will receive the REVIEW free of charge from October, 1879—six numbers.

NOTICE.

We have to remind many of our friends that the REVIEW is not a speculative undertaking, and that the products from the subscriptions are entirely used for improvement in the carrying on of the work. Those amongst them who have overlooked the settlement of their fees will be kind enough to send us their remittance on Postal Order Station G., N. Y.

PHYSIOLOGY.

COMPARISON OF THE EFFECTS OF INHALATION OF CHLORRFORM AND ETHER IN ANÆSTHETIC AND TOXIC DOSES UPON THE HEART AND RESPIRATION.

BY M. ARLONIG.

All physicians have observed that the first inhalation of chloroform and ether give rise to great excitement, in the course of which death may take place suddenly. Mr. Bert has demonstrated that this period is due to the irritating action of the anæsthetic vapor upon the sensitive nerves of the first respiratory chambers, and Dogiel, Holmgrien and Guade, Hering and Kratschner, Krishaber and Frank have observed that the often fatal syncope which takes place at that time had the same cause. Experimenters have also observed another period of agitation, which is seen during the direct introduction of the vapor into the trachea. This was attributed by Dogiel, Holmgrien, Rutherford and Richardson to the influence of the vapors of the chloroform upon the termination of the bronchial nerves, and by Picard to the action that the anæsthetics exercise upon all sensitive nerves, before producing this physiological death.

We have studied the second period of excitation comparatively with chloroform and ether. Here are the results we have obtained: When one allows air loaded with vapor of chloroform to enter the trachea of a dog, the heart of this animal is accelerated (150 to 160 beatings to the minute); the pressure rises in the arteries, then lowers, notwithstanding the increasing acceleration of the pulse (200 pulsations); the systoles become smaller and smaller; all at once the heart diminishes its motion, three or four slow systoles take place, and then it stops entirely. These phenomena take place in about thirty seconds.

Simultaneously the respiration is accelerated, the thorax has a tendency to contract more and more; one may observe several

deep irregular respirations and at last three or four convulsions, followed by death. If one stops quick enough the tracheal inhalation, the accident disappears, the respiration being re-established.

In administering *ether* in the same condition, the production of so alarming symptoms does not take place. The first inhalation may last four or five minutes without producing the slowing or stopping of the heart. The respiration is also less disturbed.

In resumé, the introduction of anæsthetic vapor into the circulation is accompanied—with chloroform, by acceleration of the heart, suddenly followed by lowering in action and stopping of this organ (sideration). With ether—by acceleration and a simple weakening of the contraction of the heart.

The second period of excitation is observed after the section of the par vagum nerves, proof that the explanation given is not acceptable. In combining this section with those of the spinal marrow, one may convince himself that the acceleration of the heart and the increase of the arterial tension are placed under the influence of the bulbo-medullary centers and of the sympathetic, and the stopping of the heart under the dependence of the par vagum.

2d. If, stopping and continuing at times the tracheal inhalation, one continues the administration of the anæsthetic until the apparition of the toxic phenomena, one with astonishment will observe that the animals present a kind of accoutumance, a moment arrives when the inhalations must be continued to bring on death. In this case the *chloroform* produces an increasing acceleration of the heart, in spite of which, the arterial pressure diminishes more and more, because the length of the systole becomes less and less; soon the pulsations, separated by long intervals, become rare and soon difficult to feel; at last the heart stops, two or three minutes after the respiration. This function offers, before it stops, phases of acceleration and of apnœa; at times it diminishes in amplitude to such extent that its tracing resembles the graphic of rapid arterial pulsations. The intoxication by ether has a special physiognomy. The heart stops, and then after the respiration, beats faster and faster. The pulsations are small,

scarcely perceptible, and cease suddenly thirty-five to forty seconds only after the respiration. This function accelerates, loses its amplitude and offers respiratory stops which gradually bring on the stopping in expiration.

3d. This double study gives us documents upon the mechanism of the accidents taking place during anæsthesia.

When death takes place in the beginning of the inhalations, it is due to the reflex stopping of the heart and respiration, consecutive to the irritation of the nerves of the first respiratory passages. Later when anæsthetic is spread into the circulatory current, death arrives by stopping of the heart. If anæsthesia last long or if the dose of the anæsthetic has been large, there is poisoning, and death begins by stopping of respiration ; that of the heart following sooner or later.

All cases of death observed in practice may by close reflection be brought back to one or the other of the three mechanisms. Then the old precept, watch the heart when you use chloroform, and the respiration when you employ ether, is not strictly true at all periods of anæsthesia. In the first place, the attention must be directed both towards the heart and the respiration, whether ether or chloroform is used. In the second place, one must watch the heart, and especially if chloroform is used, for it is in that period that with this agent one is likely to meet with the sideration of the patient.

In the third place, watch the respiration and as the conclusion of the intoxication by ether is more sudden than that by chloroform, the surgeon will do wisely, unless by special indication, in preferring chloroform to ether when the operation to perform will be, or is likely to be long ; he will thus have more time, before the stopping of the heart, to overcome the accidents of the intoxication.—*Gazette Medicale*.

EXPERIMENTAL PHYSIOLOGY.

COMPARATIVE INFLUENCE OF INTRA VENOUS INJECTIONS OF CHLORAL, CHLOROFORM AND ETHER UPON THE CIRCULATION.

BY M. ARLONIG.

To bring on anæsthesia and register the circulatory modification accompanying, we inject in the veins of a large animal chloral in solution of one-fifth chloroform and ether, in solution and suspension in a large quantity of water (20 pints). The necessary dose must be given several times, and each time slowly in a vein some distance from the heart.

1st. If one takes, before and after the injection, cardiographic tracings with the instruments of Chauveau & Marcy, it is observed that the effects produced are not the same. All three agents produce an acceleration of the beatings of the heart, which is, however, greater and more active with the chloroform; but one of them, the chloral, produces first a slackening, besides; the chloral and ether lower the pressure in the right ventricle, while chloroform increases it; again, this last or ether increases the strength of the systole, while chloral diminishes it. From this can be concluded that the pulmonary circulation is activated under the influence of chloral and ether and diminished under that of chloroform.

2d. We have simultaneously registered the modifications of the *pressure* and the changes of the *rapidity* of the current of the blood in arteries, before sleep and during the effects of the anæsthetic (the tracings being obtained with the new hemodromograph of Chauveau), obtaining the following effects: Injections of *chloral* give first a slight increase of pressure, with a slight increase in the systolic current and diminution of the diastolic; soon they produce a falling of the pressure and an increase of the diastolic current which lasts till the end of the anæsthesia. *Chlo-*

roform produces often at first a slight vaso-dilating action, which is followed by a vaso-constriction so much stronger, that it is more manifest upon the tracings of rapidity notwithstanding the increase of the strength of the systole of the heart; the vaso-constricting action diminishes during the third period of the chloroformization, but it is not followed by an inverse action, unless the dose of chloroform is toxic. *Ether* modifies the arterial circulation in the same direction as chloral; in advanced etherization, the pulsations of rapidity present a strong dirotism; one observes also a retrograde vitess at each pulsation, in such a way that the blood column oscillates in the large arteries.

3d. During chloralization the curve of the *venous* pressure rises and sometimes presents all the pulsations of the arteries. During chloroformization the modifications of the venous pressure runs parallel to the arterial. During etherization the two pressures oscillate first in the same direction, and later the venous pressure rises as in chloralization.

4th. From the examination of the simultaneous modifications of the circulation in arteries and in veins, it results: first, that the flowing of the blood in the *capillaris* diminishes some in the beginning of chloralization and etherization, to increase much afterwards; second, that this flowing after a short increase, diminishes in the beginning of the impregnation by chloroform, to become afterwards gradually greater, without however reaching the rapidity that it had in the physiological state.

5th. The state of the cerebral circulation during anæsthesia is yet in doubt; for some there is hyperæmia at first and anæmia in the confirmed sleep; for others there is, during the sleep, cerebral hyperæmia. The means used at this day to observe these modifications are insufficient and expose one to error. The best mode to judge if the cerebral circulation increases or diminishes in rapidity consists in studying the changes in the rapidity of the current of blood in the arteries distributed in the brain, in having the cranium intact and to compare these changes with those of the pressure in the blood vessels and corresponding veins. In operating in this way, it is seen, first, that all anæsthetics do not produce the same effects on the capillary system and that it

is impossible to conclude from one anæsthetic to the other; second, that the sleep by chloroform is accompanied with anæmia; that by chloral and others, with cerebral hyperæmia. One comes again to this conclusion, that the modifications of the encephalic circulation are not essential and consequently cannot be regarded as the cause of the artificial sleep. From the results of ophthalmoscopic examinations and the cerebral circulating modifications which we just reported, the chloroformic sleep seems to be the one which has the greatest analogy to the natural sleep.—*Gazette Medical.*

PATHOLOGICAL PHYSIOLOGY.

RABIES.

BY M. GALTIER.

Conclusions.—1st. Rabies in dog is transmissible to the rabbit, which becomes a kind of handy and harmless reactive to determine the condition of virulency or non-virulency of the different liquids coming from rabid animals. I have used them in that direction a number of times to study the saliva and other liquids taken from the dog, sheep, and rabid rabbits.

2d. Rabies of the rabbit is transmissible to animals of its own specie. I am unable yet to say if the rabid virns of the rabbit has the same intensity of action as that of the dog.

3d. The symptoms predominating in the animal are paralysis and convulsions.

4th. The rabbit may live from several hours to one, two, three or even four days after the disease has manifested itself.

5th. Not only is the rabbit susceptible to contract the disease, and live a certain time after the appearance of the disease, but it is certain, from all my experiments, that the period of incubation is shorter in him than in any other animal, a fact which renders him a precious agent to determine the virulency of such a thing.

Twenty-five cases of rabies, in my experience, gain an approximate average of eighteen days for the duration of the period of incubation.

6th. Salycilic acid, given hypodermically, in a daily dose of gr. 0068 for fourteen days following the fifth hour of inoculation, has not prevented the development of the disease.

7th. The saliva of a mad dog taken from the living animal, and kept in water, is yet virulent five, fourteen, and twenty-four hours after. A very important fact, as it proves that the water of a basin in which a mad dog may have dropped his saliva must be considered virulent at least for twenty-four hours, and that the saliva of a mad dog which has died or has been killed, is dangerous, and that precautions against inoculation must be taken while making post mortems and while the buccal and pharyngeal cavities are examined.—*Gazette Medicale*.

REPORTS OF CASES.

INGUINAL HERNIA: COMPLICATIONS; SUGGESTIONS.

Mr. Courtial reports a case of inguinal hernia which after reduction was treated in the usual manner, viz., castration by the covered operation. Six days afterwards the clam being removed, a large fold of intestine protruded on the left side, and with much difficulty was returned to the abdomen, the animal having been properly thrown and secured. The edges of the wound being secured, another clam was applied and the animal placed in his stall. He made a good recovery, the second clam having dropped off eleven days afterward. From this experience, Mr. Courtial concluded, 1st that in removing the clam in cases of hernia or even in ordinary cases of castration, it is dangerous to carry one of the hind legs forward, as by this movement, the intestinal mass is squeezed, and if at that time a part of the intestine is on a level with the canal, it may tear the yet soft cicatrix of the ring and protrude outward. It is better to carry the leg backward as in the act of shoeing.

2d. It is preferable to have a clam fall by itself, as in that case, the hardness of the cicatricial tissue will resist the tendency of the intestine to pass into the canal and prevent the return of the hernia.—*Journal de Zootechnie*.

MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

On the 16th of September, 1879, the seventeenth annual meeting of this Association was held in the American Veterinary College, New York City.

The session of the *comitia minora* was called at 10 A. M., with the President, C. P. Lyman, in the chair, and Messrs. Liautard, Robertson, Coates and Holcombe present. Absent members were, Bryden, Burden, Lockhart, Stickney and Thayer. All the candidates for membership being graduates of recognized Veterinary Colleges, the following named gentlemen were recommended to the Association for election :

O. C. Farley, V.S., Boston, Mass.; R. A. McLean, D.V.S., Brooklyn, N. Y.; T. B. Rogers, D.V.S., Newark, N. J.; W. B. E. Miller, D.V.S., Hightstown, N. J.; A. D. Carman, D. V.S., Brooklyn, N. Y.; C. C. Cattnach, D.V.S., N. Y. City; T. J. Herr, D.V.S., N. Y. City; J. J. Smith, D.V.S., Chambersburgh, Pa.; Wm. Kleindoph, D.V.S., Middletown, Pa.; L. McLean, M.R.C.V.S., Brooklyn, N. Y.

On motion of Dr. Liautard, the *comitia minora* adjourned.

The Association meeting was called at 10:30 and the following members answered roll-call :

Messrs. Bell, Burden, Budd, Coates, Corlies, Cosgrove, Field, Force, Hall, Holcombe, Hopkins, Laidlaw, Lawrence, Lockhart, Liautard, Lyman, Michener, Myers, Jr., J. Penniman, G. P. Penniman, Robertson, Stickney, Saunders, Thayer, Very, Winchester and Wray. Professors McEachran of Montreal, and Law of Cornell University, sent communications expressing their inability to be present. Messrs. Billings, of Boston, Mass., Sullivan, of

New Haven, Ct., and Simmen and Holman, of Brooklyn, N. Y., were present as invited guests.

The minutes of the previous meeting held in Boston in March last, were adopted as read by the Secretary.

The committees on Diseases, and Education and Intelligence, had no reports to make.

The report of the *comitia minora* was read and accepted.

Dr. Thayer, seconded by Dr. Bell, moved that the Association vote for the election of all the candidates recommended at one ballot. J. D. Hopkins objected and the motion was withdrawn.

Balloting then proceeded in the regular way, resulting in the election of Messrs. Farley, R. A. McLean, Miller, Herr and L. McLean. Messrs. Rogers, Carman, Cattnach, Smith, and Kleindoph were not balloted for, inasmuch as they had not complied with all the requirements of the By-Laws.

The Chair appointed Messrs. Liautard, Laidlaw, Bell, Saunders and G. P. Penniman a committee to nominate officers for the ensuing year. The committee reported :

For President, J. L. Robertson, of N. Y. City ; Vice President, J. H. Stickney, of Boston, Mass. ; Recording Secretary, A. A. Holcombe, of N. Y. City ; Corresponding Secretary, Wm. J. Coates, of N. Y. City ; Treasurer, Charles Burden, of N. Y. City. Censors : A. Liautard, C. P. Lyman, A. Lockhart, E. F. Thayer, W. J. Coates, C. B. Michener.

It was moved by Dr. Stickney that the Secretary be instructed to cast the vote of the Association for the candidates as nominated, in a single ballot. The motion was carried, and the Chair appointed Dr. Laidlaw a committee of one to conduct the newly-elected President to the chair. Retiring President Lyman thanked the Association for the honor conferred upon him during the last two years, as presiding officer, and expressed the hope that our present era of good feeling would be maintained through all future time.

President Robertson accepted with gratitude the flattering compliment which the Association had paid him in choosing him as their chairman for the next year, and assured those present that his first endeavor would be to maintain the best of

friendship between all members, and to advance the science of veterinary medicine to the furthest extent possible. Dr. Liautard, as editor of the *Review*, reported the condition of that journal as being at present most flattering, and asked that he be permitted to lower his price of subscription from \$4 to \$3 a year, after the completion of the present volume. Dr. Stickney thought the price, as at present, was low enough, and moved that it be maintained at \$4 a year. After this motion had been carried, L. McLean moved that students of veterinary medicine shall be required to pay but \$3 a year subscription for the *Review*. After some discussion by the editor, Dr. Stickney and R. A. McLean, the motion was adopted. On motion of J. C. Corlies, seconded by Dr. Thayer, the refusal of the Association to ballot on the application for membership of T. B. Rogers, was reconsidered, and his election followed, he having requested that such action be taken.

The chair then appointed Dr. Liautard and R. A. McLean a committee to invite visitors to the room, after which J. D. Hopkins read a paper on "Contagious Pleuro-Pneumonia," setting forth the history of the disease in America, the extent of its spread and present prevalence, with a detailed account of the work done by the State Cattle Commission since its organization last winter.

The contents of the paper gave rise to an animated discussion, participated in by Drs. Stickney, Billings, Lockhart, Liautard, McLean, Thayer and Holcombe.

Dr. Liautard moved "That a committee of five members of this Association be appointed by the President, to draw a set of resolutions to be presented to Congress in relation to the investigation and prevention of contagious diseases of domestic animals:—

"That said committee notify the National Board of Health of their action:—

"That a sub-committee of three delegates be selected by this committee to proceed to Washington, after the assembling of Congress, there to further the interests involved in this matter:—

"And that the committee have power to invite members of

the profession, not members of this Association, to consult with them upon the above-named subject." Seconded by L. T. Bell, and carried.

Dr. Liantard read a paper on "Rupture of the Flexor Metatarsi," giving the results of his experiments in dividing this muscle at different points, and his conclusions as to what symptoms will be presented when rupture occurs at any of these points. The Committee on Prizes reported that two papers had been presented for the prizes, but that they had determined not to grant any prize, and recommended the return of the papers to the authors. C. B. Michener remarked that he had the misfortune to be one of the aspirants for honors, and that he desired to have his paper read and his conclusions commented on by those present, for he did not feel certain that he was right and if he was not, desired to be placed so by abler investigators. His paper on "Cerebro Spinal Meningitis (so called)" was read, and commented on by Drs. Lyman, Billings, McLean, Lockhart, Liantard and Holcombe.

At 5 P. M., the Association adjourned to dinner, at the Ashland House, Fourth Ave. and 24th Street, N. Y. City.

A. A. HOLCOMBE, Sec.

CORRESPONDENCE.

CONTAGIOUS PLEURO-PNEUMONIA.

PROFESSOR McEACHRAN VS. THE AMERICAN VETERINARY COLLEGE.

To the Editor of the American Veterinary Review :

This controversy, as might have been expected from the highly infectious character of the subject in hand, is spreading from its original focus, and I am reluctantly drawn into it, and although I am well aware that even a very mild attack of this disease leaves its characteristic pathological lesions, I hope that in this case all will recover their normal condition and temperature, because in this country the veterinary profession demands of all

its honored members that they stand shoulder to shoulder to fight the common enemy, the quack. In commencing to practice here, about four years ago, I was not a little surprised at the lack of interest the veterinary profession displayed regarding contagious pleuro-pneumonia in cattle, and the profound ignorance of some of its members as to the nature, etc., of said disease. Now this could not be because the disease did not exist, for I am satisfied that, in the spring of 1876, there were more cattle affected with contagious pleuro-pneumonia on Long Island, then in any other place of its size in the world. It was introduced here, some thirty years ago, and has, until recently, received every encouragement and facility for its perfect developement and propagation. Indeed, had this Island been a place where cattle were bred for importation, instead of importing for dairy purposes, the disease would have long ere this time, spread over a very large area of this country: then we have Professor Gamgee's admirable report of the lung plague, to the Commissioners of Agriculture at Washington in 1871. With this actual state of affairs, one can hardly come to the conclusion, that any of the professional gentlemen connected with the American Veterinary College were skeptical as to the existence of the disease in this district. Moreover I had the pleasure of examining in company with Dr. Liautard, for our own satisfaction, several cattle affected with contagious pleuro-pneumonia, at least ten months prior to Professor McEachran's visit to New York, and when I then expressed to him my surprise at those in authority doing nothing to check the spread of such a scourge, he informed me that he had several times drawn their attention to the evils that were sooner or later sure to follow, seeing the disease was allowed to vegetate and spread, as best it could, without stint or hindrance by those in authority, the owners never consulting competent professional men when their cows were affected with the distemper, but milked away as long as they could bring a drop from them, and then sold their miserable carcasses for what they would bring. So the veterinary profession being powerless, adapted themselves, I am sorry to say, to this very reprehensible state of affairs. I at that time, seeing that American cattle were sold in Scot-

land for grazing purposes, wrote to some of my Scotch friends, that contagious pleuro-pneumonia existed to an alarming extent in this part of America, and warning them to look out; I also wrote to the veterinary department of the Privy Council, London, to the same effect. Whether the gentlemen connected with the American Veterinary College did all they might, could and should have done, or all Professor McEachran expected them to do, to facilitate his investigations, of this he must be best able to judge. But seeing that they had eight days notice of his coming and of the purpose of his mission, they had ample time, if they had had the inclination, to further the object of his inquiry.

At the close of one of the meetings of the New York State Veterinary Society, Dr. Liantard called me back and asked me if I could conveniently put my hands on a case of contagious pleuro-pneumonia, if a friend of his called who might wish to see one. I told him that I had only that day ordered a milch cow to be destroyed by orders from the Board of Health, which would have been a good typical case. Dr. Liantard then arranged that if said friend did call, he would telegraph to me. I attached little importance to this conversation, and gave the matter no further consideration until I received his telegram on Saturday morning, the 25th of January, asking if I had any cases of cattle affected with pleuro-pneumonia. I replied no P. P. on hand just now. Mr. Gadsden should not have inferred from this that I was skeptical as to the existence of the disease.

On the same Saturday, at noon, I was agreeably surprised when Messrs. McEachran, Liantard, Gadsden and Lockhart drew up to my office, and Professor McEachran informed me of the object of his visit, which I then knew for the first time. I told him I knew of several isolated cases on the outskirts of the city, but there being a heavy fall of snow, they were then difficult of access. I concluded to try Blissville, with its 900 cows. I knew we would have difficulty in gaining admittance to the stables. We had some, but then that was amply compensated for by the facilities afforded our exit; which were neither graceful nor polite. However, we saw so many cattle affected with P. P. that even our Canadian friend exclaimed, "Halt,

enough!" Prof. McE. at the time forgetting that things are done on a large scale in this country. So we retraced our steps, but, I am sorry to say, not in military order; but managed to arrange with an Israelite in whom there was no guile for a certain red cow, for which Prof. McE. paid full value. The animal was not large, but the lungs were heavy enough for the money, and the pathological condition conclusive evidence of our diagnosis, and afforded splendid specimens for both Montreal and Philadelphia.

Upon these facts Prof. McEachran based his report so far as this State is concerned, which report has given rise to this controversy.

Yours Respectfully,

D. McLEAN, V. S.,

Brooklyn, August 19, 1879.

To the Editor of the American Veterinary Review:

DEAR SIR:—The accompanying specimen was taken from the hind foot of a mule about twelve years of age, that was injured in the posterior part of the fetlock joint while running away with a field harrow about five years ago. The wound readily healed, but left a stiff joint at the first inter-phalangeal articulation. This gradually extended until the metacarpo-phalangeal and the second inter-phalangeal (or articulations of the foot) became also involved, and the flexor tendons becoming contracted caused the animal to stand and walk upon the anterior face and toe of the foot. Complete ankylosis of the whole fetlock and foot soon followed, and, for three years, the animal worked and drove upon the road with apparently very little inconvenience therefrom. Gradually, however, the metacarpo-phalangeal articulation grew more and more crooked, until finally the weight of the animal upon this limb brought the whole anterior portion of that articulation, as well as that of the suffragina and the anterior face of the coronet and hoof, in contact with the ground. For about a year past it has walked in that position. There being nothing to wear the

sole of the foot away, it rapidly grew and had to be pared down very often to keep it within bounds. Recently the owner had the shoe seen in the specimen applied to prevent the skin of the fetlock from becoming so much irritated by walking upon it; and it being necessary to shorten the horn of the hoof in order to fit it for another shoe, a saw was used instead of the paring knife, for that purpose, and about two inches of the bottom part of the foot cut off with the shoe attached.

Hightstown, N. J.,
Aug. 12th, 1879.

WM. B. E. MILLER, D.V.S.

NEW YORK, Sept. 19, 1879.

Mr. Editor :

In the REVIEW of July, 1878, Mr. Billings, in alluding to the French Veterinary schools, states that they are the only ones which allow a student to make an examination without having previously studied a year with them.

As Mr. B. refers to you, will you please inform me if this statement is correct, and if not, please give requirements necessary to enter the school at Alfort, and oblige,

A STUDENT.

HEADQUARTERS 9TH U. S. CAVALRY, }
Santa Fe, New Mexico, Sept. 11, 1879. }

Editor American Veterinary Review :

DEAR SIR:—I have just finished reading your editorial in the September number on “Army Veterinary Surgeons,” and am very much pleased with the tone of it; for, whilst you contend for the rights of graduates, you are magnanimous enough to give a chance to “a few self-made good men who now hold positions, to complete their studies and obtain a degree, etc.” This, *I* am not only willing but *anxious* to do, and the proudest day of my life would be that on which I left the Veterinary College of my native city (N. Y.) with its diploma in my possession. *I have no*

diploma, simply because I would not *buy* one and was too poor to go to Europe to study; so, having a natural love for the profession and an ardent desire to become proficient, I was compelled to study when and where I could, buying and reading the latest productions to the veterinary art. *Still I am not satisfied*, knowing that the base is not properly constructed, or in other words, feeling the want of a collegiate course.

I entered the cavalry service in 1858, before the "bloody fleam" went out of use; and I look back at my practice in those days with horror and regret, and have often wished that a reputable college might be founded in our own country and that I might have the means, some day, of entering its doors as a student. Your article has hung out the latch-string, and it now only remains for the matter to be properly brought to the notice of Gen. Meigs, whose sound judgment will at once be, that it would be to the best interest of the service and the country at large to have the army veterinarians thoroughly educated and qualified for their positions, and to grant such of us as desire it a leave of absence for the purpose of entering the American Veterinary College, with a guarantee on our part to serve the Government at least four years after graduating.

I send you herewith a copy of the Old Supply Table of Horse Medicines, to be placed in juxtaposition with the new one sent you by Dr. Vollum, so that you may see what we had to select from to cure "all the ills that [horse] flesh is heir to." Dr. Vollum, as one of the Board (and I think *the* one) who made the new Supply Table, deserves the thanks of all veterinary surgeons of the army. I know he has *mine*. (The only omission the Board made is a mortar and pestle.)

Truly yours,

"A VET."

QUANTITIES FOR THREE MONTHS.

ARTICLES.	For Field Service.				For Hospital Service.				REMARKS.
	100 Horses.	200 Horses.	500 Horses.	1000 Horses.	100 Horses.	200 Horses.	500 Horses.	1000 Horses.	
Aloes.....ozs.	1	2	3	4	2	4	6	8	
Alcohol.....galls.	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{1}{4}$	$\frac{1}{2}$	1	2	$4\frac{1}{2}$	
Asafoetida.....lbs.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	
Alum.....“	1	2	4	8	2	4	8	16	
Blister Liquid.....qts.	$\frac{1}{2}$	1	2	3	1	2	4	6	
Blue Stone.....lbs.	$\frac{1}{2}$	$\frac{3}{4}$	1	2	1	$1\frac{1}{2}$	2	4	
Borax.....“	1	$1\frac{1}{2}$	3	4	2	3	6	8	
Calomel.....“	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	
Castile Soap.....“	10	15	20	30	20	30	40	60	
Ground Flaxseed.....“	8	10	15	20	16	20	30	40	
Hartshorn.....galls.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	G. O. No. 21, W.
Kennedy's Hemlock Lin't, bots	2	3	4	6	4	6	8	12	D. A. G. O. 1873
Lunar Caustic.....ozs.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	
Landannum.....qts.	1	$1\frac{1}{2}$	2	4	2	3	4	8	
Mercurial Ointment...lbs.	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	1	2	3	4	
Mustang Liniment, or if pre- ferred, Witchman's Lini- ment.....botts.	2	3	4	6	4	6	8	12	G.O's No. 13, 1871 and 84, 1873 W.
Olive Oil.....galls.	$\frac{1}{2}$	1	2	3	1	2	4	6	D. G. A. O
Oil Linseed.....“	$\frac{1}{2}$	1	2	3	1	2	4	6	
Oil Turpentine.....“	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{1}{4}$	$\frac{1}{2}$	1	2	$3\frac{1}{2}$	
Powell's Liniment, or if pre- ferred, Witchman's Lini- ment.....botts.	2	3	4	6	4	6	8	12	G.O's No. 13, 1871 and 84, 1873, W.
Resin.....lbs.	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	1	2	3	4	D. A. G. O.
Simple Cerate.....“	$2\frac{1}{2}$	5	5	10	5	10	10	20	
Salts.....“	2	3	4	6	4	6	8	12	
Sulphur.....“	$\frac{1}{4}$	$\frac{1}{2}$	1	2	$\frac{1}{2}$	1	2	4	
Saltpetre.....“	1	2	3	5	2	4	6	10	
Sweet Spirits Nitre..qts.	$\frac{1}{2}$	1	2	3	1	2	4	6	
Sngar Lead.....lbs.	1	2	4	5	2	4	8	10	
Tar.....galls.	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{1}{4}$	$\frac{1}{2}$	1	2	$3\frac{1}{2}$	
Tarter Emetic.....lbs.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	
Veterinary Cosmoline, lbs	$2\frac{1}{2}$	5	5	10	5	10	10	20	
Witchman's Horse Powders, lbs.	2	3	4	6	4	6	8	12	
DRESSINGS.									
Adhesive Plaster....yds.	1	$1\frac{1}{2}$	2	4	2	3	4	8	
Muslin, (coarse).....“	10	12	15	20	20	24	30	40	
Red Flannel, (coarse). “	2	3	4	6	4	6	8	12	
Sponge.....lbs.	$\frac{3}{4}$	$1\frac{1}{2}$	3	4	$1\frac{1}{2}$	3	6	8	
Silk for ligatures....ozs.	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$	1	2	
INSTRUMENTS.									
Abscess Knives, (2 blades) No.	1	1	1	1	2	2	2	2	
Ball Forceps.....“	1	1	1	1	2	2	2	2	
Corkscrews.....“	1	1	1	1	2	2	2	2	
Funnels.....“	1	1	1	1	2	2	2	2	
Graduate Glasses.....“	1	1	1	1	2	2	2	4	
Mortar & Pestle (iron) “	1	1	1	1	2	2	2	2	
Needles.....doz.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1	1	1	1	
Probes.....No.	1	1	1	1	2	2	2	2	
Roweling Needles....“	1	1	1	1	2	2	2	2	
Scales and Weights..“	1	1	1	1	2	2	2	2	
Syringes.....“	1	1	1	1	2	2	2	4	
Spring Lancets.....“	1	1	1	1	2	2	2	2	
Straight Scissors.....“	1	1	1	1	2	2	2	2	
Spatulas.....“	1	1	1	1	2	2	2	2	
Trocars.....“	1	1	1	1	2	2	2	2	
Tenaculum.....“	1	1	1	1	2	2	2	2	

ENGLISH ARMY VETERINARY DEPARTMENT.

The following are the terms of the new Warrant for the Veterinary Department of the Army :—

“ VICTORIA R.

Whereas we deem it expedient to alter the terms and conditions of service in the Veterinary Department of our army ;

Our will and pleasure is that Articles 409 to 415 and 1023 to 1026 of our warrant of 27th December, 1870, and Article 143 of our warrant of the 13th August, 1877, so far as it applies to veterinary surgeons, be cancelled, and that from the 1st April, 1878, the following rules shall be established and obeyed as the sole and standing authority on the matters herein treated of.

1. The rank and rates of pay of the officers of the Veterinary Department of our Army shall be as follows :

Principal Veterinary Surgeon, £800 a year, inclusive of all allowances.

	Daily.		
	£.	s.	d.
Inspecting Veterinary Surgeon.	1	5	0
After 25 years' service.	1	7	0
“ 30 “ “	1	10	0
Veterinary Surgeon of the 1st Class.	0	16	0
After 5 years' service as such.	0	18	0
“ 10 “ “	1	0	0
“ 15 “ “	1	2	0
“ 30 years's total service.	1	4	0
Veterinary Surgeon on appointment	£250 a year.		

Daily.

Veterinary Surgeon appointed before the date of our present Warrant—

	s.	d.
Under 5 years' service.	10	0
After 5 years' service.	12	0
After 10 years' service.	14	6

2. The pay of officers of the Veterinary Department shall be issued monthly in arrear.

3. The relative rank of the officers of the Veterinary Department shall be as follows :—

- I. Principal Veterinary Surgeon to rank as Colonel.
- II. The Inspecting Veterinary Surgeon acting as Principal Surgeon in India shall rank as Lieutenant-Colonel.
- III. Inspecting Veterinary Surgeon shall rank as Major; but junior of the rank, except for choice of quarters.
- IV. Veterinary Surgeon, 1st class, shall rank as Captain.
- V. Veterinary Surgeon shall rank as Lieutenant.

4. The relative rank of these officers shall carry all precedence and advantages (except as regards forage allowance, and in certain cases choice of quarters), attaching to their corresponding military rank, and shall regulate detention and prize-money, allowances granted on account of wounds or injuries received in action, and pensions and allowances to widows and families.

5. Forage, or the pecuniary allowance in lieu thereof, shall be granted to an officer of the Veterinary Department for the number of horses necessarily kept by him for duty.

6. A candidate for the Veterinary Department shall possess the diploma of the Royal College of Veterinary Surgeons, and shall be required to pass an examination before a board of military veterinary surgeons, and fulfil such further conditions as may be prescribed from time to time by our Secretary of State.

7. A candidate who shall have proved after examination that he possesses a competent knowledge of the required subjects, shall receive a commission as veterinary surgeon for a limited period of ten years' service.

8. The services of a veterinary surgeon appointed after the date of our present warrant shall be dispensed with on the completion of ten years' service, unless he be specially selected for further employment in the Veterinary Department, or, if he be unwilling to continue to serve therein, and he shall be entitled to receive in lieu of all pension or retirement, pension for wounds excepted, the sum of eight hundred pounds.

9. A veterinary surgeon appointed after the date of our present warrant of less than ten years' service, who may be disqualified for duty by ill health, certified by a board of medical officers to have been contracted in and by the service, may, at the discretion of our Secretary of State, be granted half-pay at the rates speci-

fied in Article 19, for a period not exceeding six months at one time. In special cases in which the circumstances may appear to our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in service.

10. At the expiration of that period of six months, if the veterinary surgeon so appointed be able to resume his duties, he shall be entitled to complete his term of ten years' service. If he be unable to resume duty, as certified by a board of medical officers, he shall, if he has not served five years, be allowed to remain upon the half-pay list for a further period of six months, without half-pay; at the expiration of which period if still unable to resume duty, his services shall be dispensed with.

11. If the veterinary surgeon so appointed have served five years on full-pay, and be unable to resume duty as certified by a board of medical officers, his services shall be dispensed with, and he shall be entitled to receive, in lieu of all further pay or non-effective pay, pension for wounds excepted, a gratuity at one of the following rates, viz.:—

				£
If he shall have completed	9 years' full-pay service . . .			720
"	" 8 " . . .			640
"	" 7 " . . .			560
"	" 6 " . . .			480
"	" 5 " . . .			400

12. If a veterinary surgeon so appointed be unable to complete his ten years' service from any cause other than reduction of establishment, wounds or ill-health, certified by a board of medical officers to have been caused in and by the service, he shall be allowed not more than six months' leave without pay, at the expiration of which period, if unable to resume duty, his services shall be at once dispensed with, and he shall have no further claim on the Department.

13. If the services of an officer be temporarily dispensed with in consequence of a reduction of establishment, he shall be granted the rates of half-pay fixed by Article 19, until there be an opportunity of re-employing him, or, if he have served five

years, he may retire from the service with a gratuity according to the rates specified in Article 11.

14. Every year it shall be competent for our Commander-in-Chief, on the recommendation of the Principal Veterinary Surgeon, to select, with the approval of our Secretary of State, a number of veterinary surgeons, not exceeding four, who shall be retained in the service.

15. A veterinary surgeon shall be eligible for promotion to the rank of first class veterinary surgeon on completing twelve years' service.

16. A veterinary surgeon of the first class shall serve fifteen years in our army as a commissioned officer before he shall be eligible for promotion to the rank of inspecting veterinary surgeon.

17. All promotion from the rank of veterinary surgeon to that of veterinary surgeon of the first class, and from the rank of veterinary surgeon of the first class to that of inspecting veterinary surgeon, shall be given for ability and merit, upon the selection of our Commander-in-Chief, with the approval of our Secretary of State; and the grounds of such selection shall be stated to us in writing and recorded in the Department. In all such cases the amount of foreign service shall be expressly stated.

18. Officers of the Veterinary Department shall have a right to retire after twenty years' service. Inspecting veterinary surgeons, veterinary surgeons of the first class, and veterinary surgeons, shall be placed on the retired list when they shall have attained the age of fifty-five years.

Non-Effective Pay.

19. An officer of the Veterinary Department placed on half-pay by reduction of establishment, or on the report of a medical board, in consequence of wounds or ill-health caused in and by the discharge of his duties, or placed on the retired list under Article 18, on account of having attained the age of fifty-five years, shall (subject to the provision in Article 21) be entitled to half-pay or retired pay at the following rates:—

Principal Veterinary Surgeon	.	.	.	£500 a year.
				Daily.
Inspecting Veterinary Surgeon—				£ s. d.
After 30 years' service	.	.	.	1 1 0
“ 25 “ “	.	.	.	0 19 0
“ 20 “ “	.	.	.	0 17 6
Veterinary Surgeon, 1st Class—				
After 25 years' service	.	.	.	0 16 0
“ 20 “ “	.	.	.	0 13 0
“ 15 “ “	.	.	.	0 10 6
Veterinary Surgeon—				
After 15 years' service	.	.	.	0 9 6
“ 10 “ “	.	.	.	0 8 6
“ 5 “ “	.	.	.	0 7 0
Under 5 “ “	.	.	.	0 4 0

20. The rate of half-pay awarded to an officer retiring for his own convenience, after twenty years' service on full pay under Article 18, shall not exceed one-half of the rate of full pay of which he was in receipt at the time of retirement.

21. The rate of half-pay awarded to an officer retiring for his own convenience, after twenty five years' service on full pay, shall not exceed seven-tenths of the daily pay he may have been in receipt of when thus retiring on half-pay, provided he shall have served three years in his rank or shall have served abroad for ten years in all ranks, or five years with an army in the field.

An officer of twenty-five years' service, whose service falls within neither of these conditions, shall be entitled only to seven-tenths of the daily pay received by him prior to his last promotion.

22. An officer of the Veterinary Department placed on half-pay from any other cause shall be allowed only a temporary rate of half-pay (not exceeding the rates specified in Article 19) for such period and at such rates as our Secretary of State shall decide, with reference to the services rendered to the public by such officer.

General Regulations.

23. In all matters not specially provided for in our present warrant, the officers of the Veterinary Department shall be subject to the general regulations for the department of our army.

Given at our Court at Osborne, this 22d day of April, 1878, in the forty-first year of our reign.

By Her Majesty's command,

FRED. STANLEY.

ADDITIONAL REGULATIONS TO ROYAL WARRANT.

Candidates will be required to pass a medical examination as to their physical fitness for the service. They must also not be over twenty-six years of age, and unmarried.

Candidates on joining will be required to serve a probationary period not exceeding six months; if not then approved of, their services will be dispensed with.

Applications for admission to the Veterinary Department of the Army should be addressed to the Principal Veterinary Surgeon, War Office, London, accompanied by a certificate of age, and testimonials of character and qualifications.

J. COLLINS, P.V.S.

ITALIAN VETERINARY CONGRESS.

A committee composed of the professors of the different schools of veterinary medicine in Italy, as well as of practitioners in the different parts of that country, has published invitations to a congress which is to take place at Bologna on the 7th of September.

The questions to be discussed are divided into two categories.

VETERINARY EDUCATION.

1. Propositions relating to the conditions of admission in the veterinary schools.

2. Number and organization of the Governmental and private schools of veterinary medicine.

3. Junction of the veterinary schools to the universities of first-class and other superior universal institutions.

4. Fixation of the number of professors and assistants of the

schools and repartition of the branches of the curriculum amongst the different chairs.

5. Necessity of giving more extension to the instruction in descriptive and topographical anatomy, and of separating it from physiology.

6. Means to render veterinary education in the different schools more practical.

7. Creations in all schools of a clinic for bovine, ovine, and porcine species.

8. Creation of a special chair for instruction in the inspection of meat.

9. Creation of inspector for the Italian veterinary schools.

10. Biennial nomination of directors for each school.

11. Improvement in the position of the teaching personnel.

12. Organization of an outside clinic.

13. Administration of the veterinary college.

14. The course of zootechny in all these schools. The importance to give to the course.

PROFESSIONAL QUESTIONS.

1. Necessity of prohibiting the practice of veterinary medicine by persons non-graduated in veterinary science.

2. Obligatory institutions of veterinary societies in all Italy.

3. Organization of the veterinary service, in its connection with the meat markets of large cities, and determination of the best means to have a meat inspection in all the smaller cities of the kingdom.

4. Necessity to formulate the principles which ought to guide the veterinary meat inspectors in the appreciation of the anatomico-pathological lesions by which meat will be thrown off the markets.

5. Organization of the veterinary service in Italy.

6. Law regulating the rehibitory vices and trade of domestic animals.

7. Formation of a mutual aid association amongst veterinarians.

8. Necessity to regulate a veterinary pharmaceutical tariff.

STATISTICS EXTRACTED FROM THE OHIO AGRICULTURAL REPORT OF 1877-78.

In State of Ohio in 1878.	Number.	Value.
Horses.....	740,200	\$36,771,500
Mules.....	27,306	1,552,226
Cattle.....	1,568,878	25,794,802
Sheep.....	3,909,604	8,578,123
Hogs.....	2,341,441	5,464,465

The zymotic diseases attacking horses in this locality are glanders and farcy, epizootic, and enzootic influenza, hoemoglobinuria and osteo porosis.

Those affecting cattle are anthrax, Texas fever, tuberculosis, variola, a specific enzootic keratitis and some other contagious blood diseases which are not described in veterinary literature. Contagious pleuro-pneumonia has not made its appearance as yet.

The so-called hog cholera is very prevalent in this region among the swine, destroying large numbers of them. Anthrax erysipelatodes is also somewhat prevailing.

The therapeutic of the diseases among sheep as well as swine is generally in the hands of empiries.

Died in 1877.	Number.	Value.
Horses.....	11,047	\$747,213
Cattle.....	16,420	280,481
Sheep.....	59,106	148,700
Hogs.....	306,349	1,334,655

It is not stated in the statistics what special disease these animals fell victims to ; mention is merely made that 20,623 of the sheep were killed by dogs.

The health officer was consulted in regard to veterinary sanitary laws and regulations, who informed me that there were no such laws existing in Ohio. In the Ohio Agricultural Report of

1875, however, will be found an act to prevent spreading of contagious diseases amongst horses, cattle and stock.

SEC. 1. Be it enacted by the General Assembly of the State of Ohio, That it shall be unlawful for any person to sell, barter, or dispose of, or permit to run at large, any horse, cattle, sheep, or other domestic animals, knowing such horse, cattle, sheep, or domestic animals are infected with contagious or infectious disease, or has been recently exposed thereto, unless he shall first duly inform the person to whom he may sell, barter, or dispose of such horse, cattle, sheep, or other domestic animal of the same; and any person so offending shall, on conviction thereof before any court having competent jurisdiction, be fined in any sum not less than twenty nor more than two hundred dollars, with costs of prosecution, or be confined in the jail of the county for not more than thirty days at the discretion of the court.

SEC. 2. That any person, being the owner or having charge of any horse, cattle, sheep, or any kind of stock, knowing the same to be infected with contagious or infectious disease, shall knowingly permit it to come in contact with any other person's horses or stock, without such person's knowledge or permission, shall be fined in any sum not less than fifty nor more than five hundred dollars, with costs of prosecution, or be confined in the jail of the county for not less than ten nor more than fifty days, at the discretion of the court.

SEC. 3. This act shall take effect from and after its passage.

Passed April 16th, 1867.

In cases of emergency the Board of Health has the power to make and pass such regulations as they may deem necessary and proper.

EXCHANGES, ETC., RECEIVED.

HOME EXCHANGES.—National Live Stock Journal, Prairie Farmer, American Agriculturist, Scientific Farmer, Country Gentleman, Medical Record, Medical and Surgical Reporter, Hospital Gazette, Ohio Farmer, Turf, Field and Farm, Bulletin of National Board of Health.

FOREIGN EXCHANGES.—*Clinica Veterinaria*, *Veterinary Journal*, *Veterinarian*, *Recueil de Medecine Veterinaire*, *Gazette Medicale*, *Revue fur Thierkeilkunde und Thierzucht*, *Monatsschrift des Vereines der Thierarzte*.

NEWSPAPERS.—*Maine Farmer*, *New England Farmer*, *Farmers' Review*, *Vermont Record*.

CATALOGUES.—*College Quarterly* (Ames, Iowa), *Sryks vecartsenijschool te Utrecht*.

PAMPHLETS.—*Report on Milk and Daries in New Orleans*, *Glanders and Farey* (Providence).

COMMUNICATIONS.—*M. Stalker*, *Tempany*, *Student*, *L. Mclean*.

AMERICAN VETERINARY REVIEW,

NOVEMBER, 1879.

ORIGINAL ARTICLES.

THE TRUE POSITION OF VETERINARY SCIENCE,

AND

THE REQUIREMENTS NECESSARY TO ITS PROPER STUDY.

INTRODUCTORY LECTURE,

*Delivered at the opening of the Winter Session of the American Veterinary College,
New York, October 2d, 1879.*

BY

PROFESSOR FREDERICK A. LYONS, A.M., M.D.

Gentlemen :—We read, in the history of the ancient Egyptians, that in many of their magnificent temples, whose monumental ruins still exist, there stood in the inmost recesses a statue carved in stone. The figure was that of a female, and the face was covered by a long, heavy veil that completely concealed her features. On the forehead was an inscription, which translated, read thus: “*I am what I am, and no mortal has ever yet uncovered my face.*” No words that have ever been written express a more profound and far-reaching truth than those. The goddess Isis, whom the figure represented, was intended to personify nature, and the veil that draped its folds over her features expressed the impenetrable mystery that surrounded her.

It is also related that pilgrims came from far and near to wor-

ship this image. Thousands traveled over land and sea, and underwent incredible hardships to stand in overpowering awe before it, and pay their tributes of devotion and respect. Many spent their whole lives in trying to catch a glimpse of her features, and penetrate the mystery of those words that seemed so pregnant with meaning. Numerous priests devoted themselves to the rites of her worship, and to the instruction of those who were still uninitiated but wished to be enrolled among the legions of her votaries.

In those days it was considered a title to honor to be a priest devoted to this worship, and many years of hard and earnest preparation were necessary to fit the devotee to become worthy of the dignity. But, it is said, that after he was once admitted, the pleasure of the pursuit of his vocation, and the joy of the possession of those secrets reserved for the ardent followers of the cause, fully compensated him for all his previous hardships.

Thousands of years have elapsed since then, but things have not changed. We to-day are, in this respect, the ancient Egyptians, and still stand before the mysterious figure, wrapt in awe and admiration, and marvel at that sublime inscription,—“*I am what I am, and no mortal has ever yet uncovered my face.*” Who can say that he has penetrated the secret of nature, that he has uncovered her face, that he has as yet lifted that veil which conceals the spring, the source, the cause of what we to-day call nature, and that they symbolized by the statue of Isis!

To-day, in the nineteenth century, the same conditions exist. We recognize above, beneath, and around us an all-pervading force that is shrouded in mystery. On every hand we behold evidences of a material universe of which we ourselves constitute but an insignificant fraction. We know that there are vast worlds and systems of worlds in space. We observe the earth composed of land and water, varying in its surface and undergoing modifications of form, immense changes occurring even in a single generation. We see myriads of plants of all forms and sizes springing forth from the ground, blossoming, and then falling into decay. Under our eyes are millions of animal beings possessing the characteristics of life and motion. All of these wonderful things

we designate by the term nature, and you see what a vast significance that word possesses.

But our reason, itself a form of expression of this omnipresent force, is so constituted that we must find a cause for all these manifestations. These phenomena must be the result of something, and that very something, it has been the aim of the human intellect, since the human intellect has existed, to discover. This attempt has been the mainspring that has moved human intelligence from the earliest ages. The first or original cause is something that will never be arrived at, and is a matter of useless speculation and conjecture. Sufficient for us that certain phenomena exist whose immediate explanation is to be sought. It is the understanding of these causes that constitutes to-day the study of nature, and it was the endeavor to comprehend them that formed, in the days of the Egyptians, the pure and unmodified worship of Isis.

To lift the veil from nature is to-day the highest and noblest aim and ambition of the human intelligence, just as in long past ages it was the acme of perfection to reach the highest position in the worship of the mysterious goddess.

It is apparent to the most superficial reader of history, that the study of nature has always been proportionate to the degree of civilization. Natural science and civilization have gone hand in hand, one promoting the other and then reacting, both being at one time the cause and at another the effect. In the progress of intelligence, it became evident, after many centuries of fruitless groping, that the cause or causes of all the wonderful phenomena of the universe, could not be arrived at by a single leap. To believe that all these manifestations are the result of a solitary, all-pervading, mysterious, unknown and unknowable power, and to seek no farther, was extremely unsatisfactory. Special causes for special phenomena must be sought for. This fact understood, knowledge accumulated fast, and men began to comprehend nature, though very imperfectly. As facts were gathered, others were continually added to the store, until it became necessary to divide natural knowledge into departments. It would take too much time here, and perhaps be foreign to our subject, to discuss

the divisions and sub-divisions into which the study of nature has been separated. It is only within modern times, however, that natural science has been properly cultivated; but during the last century the progress has been so great that boundaries are well defined, and seekers after truth have at the present time even been converted into specialists of a more or less narrow groove. Each one, however, contributes his share of facts to the general whole, and all take part in that sublime pursuit whose object is the uplifting of that mysterious veil. The highest truth that is to come will only be reached by the method of questioning nature, and not, as some would have us believe, by the solution of metaphysical problems. How exalted then is the humblest of those who devotes his energies to the pursuit of natural science in any of its branches.

Perhaps the noblest of all these sub-divisions and the one from which most is to be expected, at any rate the one most interesting to us, is the science of *Biology*, that science which has for its object the study of *life*—how it is produced, and what are the conditions of its manifestation on the earth. It comprises, as you see, all living matter, whether vegetable or animal, for the principle of life is the same in both kingdoms, and all varieties of form, size, or habit, are but modifications of the vital principle produced by differences in conditions and surroundings.

The scope is so extensive that we must again sub-divide, and naturally we must study plants and animals separately. We are, then, now narrowed down to the particular study of animal life. But still the science is of such vast proportions that in a single life-time one individual could hope to cover but an insignificant portion of the entire field, so we are obliged to restrict our attention to a comparatively small department, leaving the rest to the observation of others, though we all combine our results to form the general totality.

We have then, centered on the study of the highest types of life; and as an off-shoot from this, the methods of best preserving life, and of restoring the animal to a condition of health when it has become the subject of abnormal or morbid conditions, become legitimate objects of enquiry. It is this that constitutes

medical science, and as the conditions of life are so complex in the higher and highest types, its scope is of truly vast extension. Indeed, when we contemplate the immensity of the territory to be traversed in this one and seemingly small department of natural science, the gaze becomes dazzled, and the heart discouraged. The horizon looms but faintly in the distance, and like the mariner on the shoreless ocean, though we continually steer toward the point where sea and sky seem to embrace, yet we are ever as far off.

The science of medicine, though itself so wide in its range, is but a subdivision of biology; for how can we know what are morbid processes without a prior thorough acquaintance with the normal conditions of existence.

Until a comparatively recent period, medical knowledge has been confined in its application to the human species, but now its benefits are extended also to the domesticated animals; for in the progress of civilization, it has been found necessary to human happiness to preserve them in that state in which they will prove of greatest utility. But just here, where the question of utility arises, is the point at which society is now making a great error. It was certainly practical utility that first pointed out the necessity of veterinary science, but practical utility is not the only aim. Viewed solely from this standpoint, veterinary medicine would be merely an art, and that of a comparatively low character. It has been considered as such, and is, to tell the truth, practiced in such a manner at the present day by most of its practitioners as to justify the conclusion. But properly regarded it is much more than an art. It is a science in the highest acceptation of that term. It is but a specialty of medical science, which in its turn comes under the head of biology, and this again is but a branch of natural science; and the prosecution of natural science must be considered as the noblest pursuit of humanity.

It was to show this connection that, a few moments ago, I endeavored to outline briefly the evolution of science from its very origin, and a few of the ultimate causes of this growth. Though it may have seemed irrelevant to treat the subject in such a manner, I deem it of such high importance that veterinary sciences should

be clearly recognized among the family of sciences to which it belongs, that I could not trace its genealogy too far back. Though it is a very young member of the house, it belongs to the most honorable and ancient of families. It must therefore support the dignity that falls upon it from its lineage.

If veterinary medicine has hitherto been looked upon with a certain amount of disrespect, and it cannot be denied that this is the case, it is not for the reason that the study in itself is unscientific or one unworthy of the attention of the highest grade of intellects. It is simply owing to the fact that its true character has not been properly set forth and recognized—that the requirements necessary to its intelligent study and practice have not been duly appreciated. Few of its practitioners, especially in our own country, have regarded it as anything more than an art, and most of them have been guided solely by empiricism, which is so dangerous when unfounded on correct principles, in lack of proper scientific culture.

In view of this evil, then, what is it that is needed to exalt the profession to the elevated rank in which it belongs by just right? Not alone that it should be practiced with apparent success; that its professions as to being able to cure this disease and to alleviate that one, to restore to soundness a crippled animal and so on, should be verified. This is not sufficient. A great deal of this may be done by empiricism or by chance. It is necessary it should be cultivated for its own sake in a true scientific spirit, more than heretofore. Not merely in view of practical applications, though these will follow, but for itself as an abstract science. In other words, practical utility may safely be left out of sight for a while, and the science cultivated simply for the abstract and seemingly unpractical truths that it will yield. This may seem fanciful and devoid of useful results, but it is certain that benefits, which may not be clearly seen, would follow.

Has not the science of astronomy been studied in a purely abstract manner? Yet what important, yes, inestimable results have accrued from it to civilization! Where would be the boasted commerce of the nineteenth century if we were not enabled to take our latitude and longitude, and find the position of a ship on the

beaconless ocean to within an eighth of a mile, by methods that astronomy has taught us? Where would be our means of so accurately measuring time, of such incalculable advantage to us, had it not been for the pursuit of astronomy simply as a means of seeking truth for its own sake? The practical results derived cannot be measured, yet did Copernicus, Kepler, Newton, Herschell, or Laplace think of them when they made their grand discoveries? The science of geology has been studied with the view of learning the true history of the earth from a scientific standpoint, yet has it not unfolded sufficient mineral wealth to compensate for the time and labor spent in the discovery of abstract truth? Chemistry and physics have been followed for the sake of the grand secrets they might yield to pure knowledge, but does not every useful art or industry existing owe something to them! Did Galileo, Marriotte, Boyle, Avogadro, Lavoisier, Priestly, Davy or Tyndall dream of the practical results of their investigations, pursued purely for the love of truth? Who would have believed that Newton and Young, studying the laws of light, would eventually prepare the way for Daguerre, Draper, and photography. When Galvani and Volta were conducting their primitive experiments on electricity, with the legs of a frog and a bit of metal, did they have the vaguest presentiment that they were the pioneers of Morse's electric telegraph, the Atlantic cable and Edison's electric light? Or did Vesalius think of what would follow when he practiced his first dissection on the human body, alone in his attic, and knowing that at any moment he might be discovered and condemned to death? When he thus laid the real foundation of practical anatomy for the sake of anatomical knowledge itself, did he dream that Hunter would dissect out any artery at will, and ligate it in its course for the cure of aneurism, or that Valentine Mott would tie the *arteria innominata*?

But there is no necessity to multiply examples. It is clear that to raise a science to its true position it must be cultivated to a large extent for its own sake, for the purpose of learning what abstract truths it may yield. Although these facts may seem of no practical utility for the time, they will not always remain barren, but be productive of abundant harvests. In veterinary science

it is the same. In it, as in others, truth must be pursued for its own sake, and not entirely as a means. The practical results may not for a time be obvious, but they will inevitably follow. At once, a twofold result is accomplished, for the science is advanced to its proper station of dignity.

But the question arises, how is this condition to be brought about? How is the science to be cultivated in this way? The answer is plain. It devolves entirely upon those who enter upon its study. It behooves that they should be actuated by the true scientific spirit, that they should be fully impressed with the requirements necessary for the pursuit of scientific investigation in general, and with what veterinary science, regarded in its proper light, demands in particular for its especial study. When those who practice it are animated by these sentiments, then will it proudly take its true station. Then will veterinary science and veterinarians receive the honor due to the position which they ought to occupy.

As these requirements are so important, so vital in their nature, perhaps it would not be amiss, as briefly as possibly, to point them out.

In the first place, then, a preliminary good education is of prime necessity. The mind should be already trained to correct habits of reasoning. It is not so much the amount of knowledge that has been acquired in a previous course of study, though certainly the more the better, as it is the character of the mental discipline that has been obtained, the habit of mind that has been unconsciously formed. Would you ask a person to sit down to the piano and play a composition of Beethoven, who had not been thoroughly drilled in the proper use of his fingers? Then would it not be as futile to expect a person to follow closely and understand such a line of reasoning as would be required, for instance, in explaining the result of a particular valvular lesion of the heart, whose mind was not accustomed to such close trains of thought.

Scientific methods must be thoroughly familiar before the facts which are their results can be duly appreciated. But these methods require for their apprehension a certain amount of mental culture. Not because they are, in their nature, different from the methods

of thought of common life. They are in the end the same, except that there is more precision, and it is preciseness that is required. In ordinary life we use our common sense carelessly and unconsciously; in science we use it with careful exactitude. A simple analysis of any scientific problem suffices to show the similarity and the difference. If you were to go home from here and find that certain articles, which you had left in particular places in your room, were turned or moved from their position, your common sense would tell you that some one had been there in your absence and disturbed them. If you did not expect anyone, you would naturally endeavor to find out who it was, by enquiry. By the very same process of reasoning Adams and Leverier, independent of each other, made their grand discovery of the planet Neptune. They were engaged in observing Uranus, which, according to the established law of gravitation, should have been in a certain place in the heavens at a given time. It was not there, it had been disturbed from its position, and consequently something must have caused this disturbance. According to the same law, another body of a certain magnitude and position would be an adequate explanation of the perturbation. They inquired for the cause, and looking at the point predicted, their assertions were verified, and the new planet discovered.

The actual process of reasoning involved in the two cases is identical, the conclusion is arrived at by the same method, but in the latter instance there is a careful precision. Scientific methods are essentially scrupulously exact; they therefore require exact minds to follow them. Exactness can only be attained by a careful process of training. This kind of mental culture, like the result of any other species of discipline, is not an inborn characteristic; it requires time and labor for its development, and should be the chief object of general education, aside from the special facts that such education affords.

An untrained mind sees nothing beyond the object before it. A trained one sees something more than this, and is perhaps able to form a theory as to what is its nature, and how it got in such a position. If a common workman was digging in a field and his shovel turned up a piece of old bone, he might perhaps recognize

it as a piece of bone, but that would be all he could tell you about it, or that he would have the curiosity to know. But let a Cuvier or a Huxley examine it, and he would from that alone be able, perhaps, to draw accurately the entire skeleton of some extinct animal. Not only that, but he might inform you how and when it got there, though it were tens of thousands of years ago.

A mind without good previous training is unable, at a single step, to cope with the subtleties and delicate questions of science. Natural intelligence may be never so clear, quick, and apt, but if it be not disciplined to exact and methodic processes, it must fail to understand and appreciate the simplest problems of biology. I repeat, it is only education of the mental faculties that can produce these habits.

When I say then, that a good fundamental education is a prerequisite to the intelligent study of veterinary science, I mean that the faculties must have been already amply trained. I do not insist that a man should have read Cicero, Horace and Virgil, or that he should be technically acquainted with logarithms and the calculus—though it would be of priceless advantage—but he should exhibit enough knowledge to show that during its acquirement, the mind had undergone a considerable amount of discipline.

No one will dispute the immense advantages to one who is prepared in this way to enter upon the study of this profession; but those who are already in its ranks, and regard it as an honorable and scientific pursuit, owe it to themselves and to their profession to insist that such previous preparation should be a *sine qua non*. Perhaps the time is not yet ripe for such a rule to be effectually enforced, but we hope it is not far distant.

A preliminary education of this description is absolutely necessary for the prosecution of scientific investigation in general, and now we may refer to what medical science, including of course the veterinary, requires particularly.

To understand life, health, and disease, requires a knowledge of the conditions under which these phenomena are produced. The vital manifestations are the result of constant chemical and physical changes. Indeed, it is the constancy of these occurrences that distinguishes animate from inanimate objects. No

life occurs without the incessant repetition of these changes, hence it is evidently necessary to know what they are, and how they are produced. An acquaintance with the laws of chemistry and of physics must therefore underlie all study of vital manifestations.

A few illustrations would perhaps show this most clearly, and point out the intimate relations and dependencies that exist between these sciences and the science of life. Of what, for instance, does the whole process of nutrition consist? It is from beginning to end composed of a definite series of chemical phenomena. The body is a sort of laboratory supplied with all the various reagents for solution, analysis, combination and decomposition; with crucibles, retorts, and furnaces in which these operations are conducted. The study of digestion in the higher animals is almost entirely a study of chemical changes. The food that is ingested cannot be appropriated directly, but must undergo certain modifications before it can be absorbed and become a part of the body. The starchy foods are, from their nature, insoluble. They are first converted into sugar by the salivary and pancreatic ferments, and when thus altered are dissolved and absorbed by the blood vessels. Albumen is insoluble. When it comes in contact with the gastric juice which is poured into the stomach, it is converted by the pepsine of that fluid into albuminose or peptone, and is then ready for absorption. When these substances are circulating in the blood they meet with oxygen, which has likewise reached the body from an external source, and there a process of oxidation takes place, resulting in the production of heat and energy, just as oxidation outside the body causes the same effects.

The laws of physics bear a no less close and demonstrable relation. The conversion of liquid water into vapor by means of heat is one example. How otherwise could we explain the evaporation of water from the surface of the body in the form of perspiration? The process of respiration is another instance. The diaphragm and intercostal muscles contract, and together expand the cavity of the thorax; then, on account of the atmospheric pressure, the air must enter the space which else would be

a vacuum. That the atmospheric pressure exercises the greatest influence in this process is easily observed, for where the air is rarified and its pressure diminished, as is the case at a high altitude, the chest expands more fully and a larger volume of air is aspirated into the lungs at every inspiration.

And so we might adduce instance after instance, but these will suffice. Yet, since I have only spoken of these simple and well known examples of the application of the laws of chemistry and physics, it might seem at first sight that the relation was limited, and that a superficial acquaintance with these laws would be sufficient for the comprehension of all physiological problems. Nothing could be farther from the truth. These laws have an infinite application. The most intricate vital manifestations can only be explained by a reference to them. They all have a chemical and physical basis. Even the most complex phenomena of the nervous system may be interpreted by their means. The highest and most subtle of all, the very process of thought and ideation, has, as to its immediate cause, some chemical or physical change, or both combined. Alexander Bain and other philosophers of his school have even pointed out with an accuracy, which, if it be not absolute, is certainly very probable, how a chemical and physical change may be transmuted into a distinct, living idea.

But I think I have said enough to convince those most unwilling of conviction, of the great importance to medicine of the study of chemistry and physics. A knowledge of these branches should properly be obtained in the preliminary education, and they should be thoroughly acquired before the student commences his more special studies. They should not really have to be included in the medical curriculum, but unfortunately we find very few who come so well prepared, and so they have to be taught side by side with the more directly practical branches.

Is it requisite that I should dwell at any length upon the importance of the study that should come next in order, that of comparative anatomy? Its necessity should be so obvious that one would think its mere mention would be sufficient, and yet it is not so. Students are in such haste to learn how to recognize disease and to cure it, especially the latter, that they often sadly

neglect this fundamental branch and gain but a superficial knowledge of it. But what a grievous error this is. How can you expect to know, when a body is out of order, where the difficulty lies, if you are not thoroughly familiar with the structure of every minute portion of that body? In the most ponderous and intricate machine, a single particle of dust clogging some obscure and seemingly unimportant cogwheel or pinion, might stop its action entirely. One part is so intimately connected with another, and the harmony of working of the whole depends so much upon the integrity of each particular portion, that the most minute spring or wheel becomes as important as the largest. If you owned such a piece of machinery and it suddenly stopped working, whom would you send for to start it into motion again? The man who fed the furnaces that gave it the power, or the skilled mechanic who was familiar with every detail of its construction, and knew exactly where to find the spot in which the damage had occurred?

But the animal body is a machine of vastly more intricate and complex construction than any that was ever invented by a human brain. Its springs, its pinions, its wheels, its joints, and its furnaces are so delicately constructed, and act in such beautiful harmony, that the most insignificant become of weight when its action is deranged. And is the living organism any less valuable or important than a mere machine made of timber and steel, that its construction should be any the less perfectly understood before it is tampered with?

A general idea of external form is not sufficient, as some seem to think. There must be an accurate knowledge of all the details which that form contains. One who is satisfied with the former, is like a person standing on the outside of some museum that contains a wonderful and valuable collection. He admires the grandeur of the building or the beauty of the architecture, but to get a perfect idea of the wonders that it contains, he must go inside and examine its contents carefully and individually.

The study of anatomy is the key to the workshop of the animal body. The various anatomical structures are the implements with which nature works out all her marvelous vital phenomena.

Having then gained a knowledge of these tools, the next step is to enquire into the functions that they perform. This constitutes the science of physiology. When all of the various organs of the body are performing their offices perfectly, and in harmony with each other, when the proper equilibrium between them exists, we have a state of health. Physiological investigation has for its object the ascertaining of the conditions of the state of health. When we are informed of these, we are enabled to perceive when any aberration occurs; in other words, we must first thoroughly understand what is health, before we can form any conception of a state of departure from it which constitutes disease. The importance of this science is so obvious, that it seems to me it would be a disregard to your intelligence to make further comment.

These, then, are the fundamental sciences. Chemistry, Physics, Anatomy and Physiology are the groundwork on which the superstructure is to be erected. According to the depth and solidity of the foundation, the magnitude and durability of the house will be proportioned. If it be not well laid, the edifice will surely totter and tumble into ruin.

When these studies have been mastered, it is time to turn the attention to those that aid specially in the discernment and treatment of disease—Pathology, Surgery, Practical Medicine, and Therapeutics. These form the stones of the arch, of which anatomy and physiology constitute the keystone, the central point around which the others cluster.

A knowledge of all these constitutes the *science* of medicine; putting them into practice is the *art*. But take care that in following the art, the science that underlies and directs it is distinctly held in view, or it will soon degenerate. The consciousness of using the science is what distinguishes its possessor from the mere empiric who never seeks deeper than the film upon the surface. Empiricism never rises higher than its past experience; scientific art has a boundless expanse before it. It interprets the experience of the past, it gives meaning and hope to the future. Be not the empiric, but love science for its own sake, and practice the art animated by the scientific spirit.

Science is the weapon put into your hands for the warfare against disease and destruction. Use it not blindly, as the awkward savage wields his ponderous club, but skilfully as the cultivated swordsman dexterously thrusts his polished blade. Not only in the long run, but in every individual case would the latter vanquish the former in an encounter, other things being equal.

Fully armed and equipped with this weapon, you are ready for the battle, and may challenge with the fullest confidence the competition of any who enter the field with other arms.

Let the attainment of true scientific culture be the principal end in view. In this way only is true professional standing and dignity reached. Remember that veterinary science is but one department of natural science, and that the study of nature is the noblest occupation of the human intellect. You belong to the grand army whose pursuit is the tracing of that mysterious thread, that winds through labyrinthine paths, whose exit lies at the end of the yet impenetrated wilderness of nature.

I told you in the commencement of my discourse, that though thousands of years have elapsed, we are still in the position of the ancient Egyptians. Our idol is still the mysterious goddess who personifies nature, and our object is to lift the drapery from that face whose features no mortal yet has seen. Here we are assembled in a temple built in her honor and devoted to her worship. It is not so lofty or magnificent as the temples of old, but still we may find that within its walls our worship may be devoutly pursued. Our faculty are the priests who attend to the performance of her rites, and are ready to instruct novitiates in the duties that those rites require. You are the devotees who, feeling yourselves moved to pay your devotion, have come to receive instruction in the methods which that homage demands for its proper performance. You have to undergo an arduous apprenticeship that requires some sacrifice, but when you possess the secrets reserved for those who are deserving of being received into the upper circle of the fold, you will feel amply compensated for the difficulties conquered in the accomplishment of the task.

MEDICAL ART AND SANITARY SCIENCE.

BY E. MINK, V.S., ROCHESTER, N. Y.

(Read before the Rochester Veterinary Medical Association.)

We think it would be difficult to find, in the present day, a medical man of conceded intelligence and observation who would deny the utterance of Dr. Dixon some years ago, to wit: that "Nature is ever busy, by the silent operation of her own forces, in curing disease. Her medicines are air, warmth, food, water, exercise and sleep. Their use is directed by instinct; and that man is most worthy the name of physician, who most reveres her unerring laws."

Great progress has been made during the last few decades in what are called the exact sciences. Yet we think it will be generally admitted that a corresponding progress has not been made in the rational treatment of disease. In most cases that terminate favorably, an undue estimate is placed on the remedies used by the attending physician, while the force which nature exerted in effecting the restoration is underestimated or entirely overlooked.

For the general patronage which empiricism and all irrational methods of practice receive, medical men of the past and present are themselves much to be blamed. To a great extent they have played on the credulity of the people, by allowing them to attribute to the medical art, without attempt at correction, an importance in the cure of disease it does not possess.

Had medical men made the efforts they should have made, during the many years they occupied positions of prominence and influence, to enlighten people in regard to the measure of merit that should be accorded to nature and art respectively, the superstitions and absurd credulity that exists among people so generally in regard to the transcendent power of the medical art to cure disease would be unknown; and in its stead would be entertained a rational conception of the real power each exerts.

It is not strange that such credulous ideas prevail when we consider the lack of trust in nature shown by many medical men. Few have dared or even cared to trust acute disease to the restorative powers of nature. And it is in this form of disease that the medical art has been accorded the merit of having exhibited its greatest usefulness. The few brave and honest physicians who have dared to practice in accordance with convictions, have proved to observing and thinking minds that the conservative and restorative forces of nature, when attended with favorable hygienic and sanitary conditions, are alone equal to removing disease and restoring health in nearly all curable cases.

Many medical men, when called upon to treat a case that terminates in restored health, seem willing and anxious to take the credit of having obtained the result solely with their artificial remedies. While it may be a pleasing thing for them to receive such an undue award of merit and encourage them to favor a continuance of the fallacy so generally believed, in regard to the wonderful efficacy of artificial remedies, they should remember that this same fallacy renders them liable in cases that result unfavorably or fatally, to the charge of lack of skill or misapplication of remedies, a charge that might be as undeserved and unjust as the undue merit given them in cases that resulted favorably. For our part, we think it important that a just estimate should be accorded to the force each exerts.

If truth demands that the medical art should lower the importance it has claimed for itself, it will also demand that sanitary science shall come to the front. And in this useful science medical men will, and must of necessity act the most conspicuous part. The part they are called upon to take in this important science will entitle them to all the honor that is due to great usefulness in the prevention of pain, misery and death.

Sanitary science has for its special object the prevention of disease, while the medical art has for its special object the curing of disease. The two may be considered as branches of one grand domain of science, the science of the laws of health.

In order to form a proper estimate of the importance of sanitary science, let us consider briefly the magnitude of its field of

action. The first grand demonstration of the prevention of disease was that of Dr. Jenner when he discovered and put in use the means by which one of the greatest pestilences known can be controlled—vaccination.

Previous to his discovery ninety-six deaths in every thousand in England were from small-pox. Shortly after the proportion was reduced to thirty-five per thousand. Now, when small-pox appears in any community, the proportion of deaths will be an indication of the extent to which Jenner's discovery is applied to control it. Another great measure to prevent the spread of disease is the system of quarantining adopted by commercial nations. In this way the spreading of leprosy, cholera and other plagues have, to a great extent, been prevented. It is also the province of sanitary science to suppress the generation of disease, as well as to prevent the spread of it.

It is plainly seen that to prevent disease is to preserve lives by thousands and tens of thousands that would otherwise fall victims to pestilences that stalk at noon-day.

The importance of the curative art sinks almost into insignificance when compared with it. In most of the great plagues of the present, such as yellow fever, cholera, etc., the curative art steps in with its remedies and applies them with anxious and humane, but comparatively impotent hands. It sees the victims of disease suffering and dying by thousands, and can do but little more than ease their way down to death. Clearly, then, the most important province of the medical profession is to prevent disease; and in proportion to the extent that it is successful, will be the measure of gratitude and fame that awaits it.

When it is seen, as Dr. Forbes says, that "the natural curative power is not one that operates merely occasionally or feebly, but one that is always present, ever acting and possessed of powers to cure the majority of diseases without assistance, then we think it must also be seen that a rational system of treatment must be one that will make due allowance for the force nature exerts in every instance." To overlook this power in the value of art, says Dr. Forbes, would be equivalent to that of a rower in a boat, who, in estimating the cause of progress in going down a

stream, should make no allowance for the motive force of the current, but attribute his entire progress to his own exertion at the oars.

The medical man, in making this concession to the force nature exerts, does not compromise his profession. He simply assumes his true position, and this is one that entitles him to high consideration. His true position is not one that allows him to play on the credulity of people by allowing them to give him credit he does not deserve. He is not to be considered merely as a curer of disease and a dispenser of drugs.

And when it is known how little drugs, etc. can contribute to removing disease, then will it also be known that but little blame can attach to the true physician for unfavorable and fatal results. In cases where medicines or any of the appliances of art can be of little or no use, the true physician is still of indispensable importance. He occupies the position of adviser regarding the laws of health. It is his duty to look after the surroundings, to see that all sanitary conditions are favorable. The apartment the sick occupies, ventilation, food, clothing, water, etc., become objects of his immediate attention.

Now, nearly all that I have said in relation to the medical art applies to the veterinary art. Its most important field of action is in the prevention of disease. The veterinary profession has such huge plagues as rinderpest, epizootic apthæ, pleuropneumonia, the so-called hog cholera and others to contend with.

It is in sanitary science that the profession must win for itself recognized positions of honor; mere curing of disease and dispensing of drugs will not bring them.

With the efforts that are being put forth by such leaders in veterinary science as Liantard, Law, Large and others, we expect soon to see the veterinary profession ranking with the medical in general and in sanitary science. We expect also to see them equitably represented in the Boards of Health which will doubtless soon be established in every State of the Union and in every city of importance within the States.

In conclusion, we wish to remark that if the great mass of people were sufficiently enlightened to enable them to estimate

fairly the degree of force that nature exerts with art in the cure of disease, ignorant quackery, much of the heroic practice of the present, infinitesimal dosing—in brief, all irrational methods of practice would soon be consigned to oblivion, and in their places we should see flourishing a rational system of treatment based upon scientific knowledge.

NECESSITY FOR CONGRESSIONAL ACTION IN RELATION TO CONTAGIOUS DISEASES OF DOMESTIC ANIMALS.

BY N. H. PAAREN, M.D., V.S., CHICAGO, ILL.

[*From the Prairie Farmer, Sept. 27th.*]

AMERICAN AGRICULTURAL CONGRESS, }
ROCHESTER, N. Y. }

It is the intention by presenting the few remarks here roughly put together, to simply draw attention to the necessity of urging upon our Government the adoption of more energetic measures, with a view of preventing the spread of contagious diseases among domestic animals, and to provide for the enforcement of such measures, by establishing a National Veterinary Sanitary Bureau.

In the present status of veterinary science in the United States, and the utter absence of the most necessary sanitary laws and regulations, it is evident that proper statistics of diseases and mortality among domestic animals, are not obtainable. That the collection of such statistics must at no distant time be undertaken, all intelligent persons will admit. The attempts made by the National and the State Agricultural Departments to obtain these, are so inefficient as to fall short of the good they might accomplish; but the public good demands the adoption of proper and efficient means for obtaining a useful and timely knowledge of

the prevalence of diseases amongst domestic animals. There are probably no means more likely to demonstrate the value of the veterinary art to this country than the publication of facts to prove how much it suffers from losses by disease amongst animals. It is much to be regretted that such a state of affairs should be said to exist; and it is very unfortunate that, instead of the question of preventing disease in stock, being freely discussed by farmers, it is never alluded to in their meetings or societies. It is quite evident that prevention is better than cure, and certainly far more profitable than to sell, or kill and bury diseased stock.

The various European Governments have long ago adopted ample means for obtaining a useful and timely knowledge of the prevalence of diseases among both man and animals. During more than a hundred years, veterinary science has been fostered by these Governments, and by their organized and successful labors, the members of the veterinary profession constantly prove how much the farmers and proprietors of animals in general are benefitted thereby. The prevention of diseases of animals is regarded as the business of these Governments; and the sanitary laws and regulations of each country are enforced with the utmost solicitude and punctuality.

It is the wonder of all civilized nations, that we Americans, with our boasted superiority in other matters of national interest, so utterly neglect this essential branch of agriculture. Here it is the business of no one to protect the lives of thousands upon thousands of dying animals, and the result is loss to the nation and ruin to individuals. The deepest ignorance prevails among the most intelligent people regarding disorders affecting the lower animals which are very common, and there is a tendency to seek for cures and specifics, whereas proper preventive measures would at once arrest such diseases. Many disorders prevail to a considerable extent, with the true nature of which nobody seems to be acquainted, and the existence of which is only casually learned through official sources. It is well known to the medical profession that there is a remarkable connection between certain diseases in man and the lower animals; and it is certain that many severe attacks of disease in man can be traced to unwholesome animal

food, and to the congregation of diseased animals, especially in crowded cities. It has affected the health of the people to an extent becoming appreciable the more the subject is investigated. The importance of the subject, however, demands the same regular, systematic, and constant investigation that is devoted to human maladies. If stout-constituted animals can be demonstrated to be dying chiefly from preventable diseases, it is evident how much would be saved to the farmers and to the nation, by reducing the mortality to a minimum.

In my remarks concerning veterinary sanitary reform, read before the National Agricultural Congress, at its meeting in Washington, I made reference to the great scarcity of competent veterinarians in the United States; and I feel constrained to repeat that the immense losses among live stock in this country, is greatly to be accounted for in the absence of a sufficient number of men who have been thoroughly and scientifically educated in this branch of medical science. That the great multitude of intelligent farmers and live stock owners in America should be obliged to contend with quacks and charlatans of the lowest description, while all other civilized nations (some of them as far back as a hundred years ago), have been provided by their Governments with amply endowed veterinary colleges, is beyond all sound reasoning—is, in fact, nothing less than a national disgrace, and justly merits the derision of other nations.

Glanders and farcy have prevailed, and prevail to some extent here and there in all of the western states and territories, among horses and mules; more so than is generally known or suspected. The importance of stringent legislation for the extinction of these twin diseases, is evident to any one at all acquainted with the dangers attending their unlimited spread, and their total incurability.

Among horned cattle, the contagious pleuro-pneumonia has, during the past year, thanks to the British Government, received a *forced consideration* by our Government, and some headway has been made towards its extinction; but, as yet, no laws have been enacted by Congress for the purpose of preventing its spread from

one State to another, or over the whole United States. This disease has been in our country a considerable number of years. If proper means had been adopted at the time of its incipency, we should never have seen it again, except by new importation; and until proper measures are taken, or Congress enacts laws in relation to trade and traffic between the States of the Union, we shall continue to suffer from it. One of the greatest sources of the spread of this disease is the unrestricted trade and traffic in cattle. Were proper precautions adopted in this direction, within certain limits, and within each State, and a thorough stamping-out process inaugurated, we should soon cease to hear of the contagious pleuro-pneumonia. The invasion of a district or country by pleuro-pneumonia contagiosa is insidious. The disease commonly escapes observation as it steals into a farm or country, and is consequently perhaps more destructive than any other known epizootic disease. Wherever the diseased animals have been slaughtered early, as in some European countries, the disease has not spread; but where months have elapsed before measures have been adopted, it has insinuated itself into many parts of the country, and has proved most destructive.

So much has been written in the public press on the subject of contagious pleuro-pneumonia, its extent and prevalence in our seaboard States, that it is unnecessary here to refer further to this subject than to suggest the adoption of more stringent measures for the thorough extermination of the disease from our land. The practice of inoculation provides only a fancied security, and should not be entertained for one moment, as it will be a certain means of promoting the spread of this disease. The stamping-out process is the only effective method of ridding the country of this pest; but it must be admitted, greatly to our disadvantage, that the progress of extermination is, in some of the affected States, apparently conducted in a very dilatory manner.

There have been several instances of severe losses among cattle in the State of Illinois, from the Texan cattle fever, occasioned by the transportation of cattle from the Gulf States, during the summer months, in defiance of the law forbidding such transportation between the months of March and October. These

losses have occasioned several law suits for heavy damages, by a number of farmers and cattle raisers. As a result, the Supreme Court of the State of Illinois has lately decided that the law for bidding such transportation of Gulf cattle, during the summer months, into the State of Illinois, is unconstitutional because the constitution of the United States reserves to the General Government the power to regulate commerce between the States. It is evident then, that in order to prevent a recurrence of the panic that ensued in 1868, the attention of the National Government must be called to this matter, with a view of having such protective measures enacted as are within its province.

In all parts of our country, tuberculosis is steadily on the increase among our cattle, and especially among the Shorthorns. Various forms of anthrax disease, especially the so-called black-leg and splenic apoplexy, have prevailed among young cattle. In various parts of Texas, Nebraska, Kansas, Missouri and Illinois, cattle have been affected with enzootic ophthalmia.

Among sheep the prevailing diseases have been foot-rot and scab. Some restrictive laws are wanted to prevent the trade and traffic in such diseased sheep.

The diseases of swine, most prevalent, have been carbuncular angina, and so-called hog cholera. The scientific investigation into the causes, nature and treatment of hog cholera, conducted under the direction of the Commissioner of Agriculture, have resulted in the discovery that medical treatment of this disease is useless, or at least profitless, and that remedial treatment must be one of different and improved surroundings, and bettered conditions of life and living in every respect. It is evident that, in order to protect the interests of owners of swine, as well as the public at large, measures of a stringent character must be instituted by legislative enactments, not only by each and every State, but by the General Government, with a view of preventing the spread of this plague, and finally eradicating the same from our midst. Restrictions should be put upon the trade and traffic in hogs, in the affected districts, with a view of preventing movements of such stock until a clean bill of health has been rendered by officially appointed veterinarians; and the reproduction and distribution of the con-

tagious principle should be counteracted by a most thorough disinfection of the premises and grounds, and the provision of penalties against transgression of necessary prohibitory laws and regulations.

EDITORIAL.

SHALL WE HAVE A NATIONAL VETERINARY BUREAU?

It is a fact pretty generally recognized, that contagious diseases exist amongst our domesticated animals in this country to an alarming extent. The investigation instituted by the Agricultural Department into the "Swine Plague," the appointment by various States of Commissions authorized to eradicate from their territories contagious pleuro-pneumonia of cattle, and various other measures adopted for the purpose of renewing and increasing our crippled trade in the exportation of live stock, all indicate that the present state of affairs is beginning to be fully appreciated by the public, and as a result, the subject of a governmental organization is becoming a general topic of discussion in the columns of our leading agricultural papers. It is a subject which we were one of the first to strongly urge upon the public, as we have already mentioned in the pages of the REVIEW, and we find our views endorsed by able agriculturists as well as distinguished veterinarians. One of our correspondents, Mr. Billings, lectured upon it before the New England Agricultural Society a short time ago at Worcester, and it finds a strong support in a paper from Dr. Paaren, of Chicago, reprinted in our issue of this month. It is also ably discussed by S. L. Boardman, Esq., in the column of the *American Cultivator*, of Boston, of which paper he is agricultural editor, while it received marked attention from the members of the United States Veterinary Medical Association at their last anniversary meeting.

The establishment of a National Veterinary Bureau seems to be the general demand. But how this Bureau shall be formed,

and what disposition shall be made of it, are questions not as yet determined. Shall it be made a dependency of the Agricultural Department, an adjunct of the National Board of Health, or an independent department by itself, are the propositions made by various advocates who entertain different views as to proper organizations. They who believe in acting with the Agricultural Department, claim that the subject is one whose interests are closely allied to agriculture, and consequently that this department should direct the work. But while this is true in part—the relationship of the interests at stake—it must not be forgotten that the scientific investigation of the cause and means of prevention of animal diseases is a matter entirely independent of agricultural pursuits. Furthermore, it is very generally believed in most quarters, that under the present régime the Agricultural Department would fail to give such attention to the matter as the subject urgently demands. With many, and among them ourselves, the National Board of Health seems to be the most appropriate department of our Government with which to organize a special bureau such as is contemplated. When we consider the intimate relationship existing between many of the preventable diseases of man and the lower animals; when we recall the fact that disease-producing causes operate similarly in the different species, and that many of the special diseases of the brute creation offer questions of unequalled importance to the investigator of human ailments by virtue of the susceptibility of their transmission, we must admit the propriety of being associated with a department whose object is in exact consonance with our own, and the attainment of which is to be reached through the self-same channels.

But there are a few who advocate the formation of an independent Veterinary Bureau, unconnected with any department already organized, and while there may not be any insurmountable or even any serious objections to such a procedure, we much doubt if such efficiency could be obtained in labor expended, as would be guaranteed by the co-operation of the scientific members of the National Board of Health.

Important as these questions are in their bearing upon the

probable results to be attained by the labor of such a bureau there is one vastly more important than all, and that is the *urgent necessity for immediate action*. Consternation may well be engendered in the minds of our cattle raisers when they review the ravages which *contagious pleuro-pneumonia* is making in several of our States, and remember that it is but a matter of conjecture how long it will be confined to its present limits. Others will be as greatly alarmed for the safety of their investments, by seeing the *swine plague* sweep through the land and in a single year destroy more than two millions of hogs. Our disasters, seeming never to come singly, are augmented by the appearance of *foot and mouth disease* in American sheep recently landed in England, and results in another embargo against American exports. Combine this with the rapid spread of *tuberculosis* among our cattle, the insidious and unchecked growth of *glanders and farcy* in our larger cities, and the lamentable frequency of *trichinosis* in our hogs, and a truthful picture is presented of the dangers by which we are daily beset. Fully appreciating the need for legislative interference by which to arrest these plagues, the United States Veterinary Medical Association at its last annual meeting appointed a committee to devise means by which the attention of Congress may be directed to the actual state of affairs at present existing, and to urge upon that body the propriety of instituting such measures as shall look to effectual and permanent relief. Longer delay in organizing a department whose duty shall be investigation of the causes of disease in the lower animals, and how they may be prevented, must prove a wilful neglect of a serious duty that threatens disaster to one of the most important interests of our country.

THE AMERICAN VETERINARY COLLEGE TO ARMY VETERINARIANS.

At the last meeting of the Board of Faculty of the American Veterinary College, an important resolution to veterinary practitioners in the army was unanimously adopted and recommended to the Board of Trustees. We call the attention of our friends in the army to the resolution, and hope that the generous and friend-

ly act of the Faculty of the College will be taken advantage of and may assist in elevating the veterinary profession in the ranks of the American military service.

ARMY VETERINARIANS.

For the interest of our army colleagues, we continue in this number the publication of Military Veterinary organization in the different countries of Europe, by presenting some extracts from the French service, relating principally to the number of veterinarians, their divisions, the mode of promotion, their rank, pay, and time of entering the retired list.

REPORT ON DISEASES OF SWINE.

We have received through the kindness of the Department of Agriculture, the special report on the investigation of diseases of swine, and infectious and contagious diseases, collected by a number of veterinarians and physicians throughout the different States. The reports are presented in the shape of a volume of about 300 pages. It is numerously illustrated and printed in an easily read type. It contains facts of very great interest to all those who wish to obtain information upon these diseases, and will be read by scientific men with pleasure and benefit.

PAUL BERT has just received the prize from the University of Edinburgh for the best discovery in therapeutics during the year. He has also had the luck to gain the case brought against him by a tender-hearted neighbor, who could no longer bear the cries of the animals brought under his knife in his vivisection experiments. The jury believing in "the cause of science," he was acquitted, his neighbor paying the costs of the prosecution.—*Monthly Review*.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME ; OR, HORSE VARIOLA.*

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

BY M. L. TRASBOT.

I.

This title indicates the fundamental idea and the object of this paper.

To establish that distemper is the proper variola of horses, and to prove that all the accidents it may give rise to, may be prevented by inoculating the young animals, are the two problems I have tried to solve.

There is, perhaps, no disease upon which more has been written than the subject before us. All veterinary publications, journals, bulletins of societies, classical or encyclopedical works, contain numerous articles, often contradictory, upon its forms, its nature and its contagiousness. Nevertheless, it yet remains poorly known in its nature. Most of the authors continue to consider as fundamental, some phenomena which, properly speaking, are but complications ; such as the catarrhal inflammations of the anterior respiratory tracts, the lobular pneumonia and even the lymphangitis and suppurative adenitis. Others have often taken some of its irregular manifestations for glanders and farcy ; thus it is certain, that those pretended cases of flying farcy and facial farcy, whose cure is reported, were nothing but cases of lymphangitis or of strangles.

And again, work generally is considered as connected with strangles in young horses ; all inflammatory affections of the throat and of the mouth, especially when they are accompanied with the

*Strangles of the English.

formation of abscesses in the submaxillary lymphatic glands.

That this is true in many cases, none will deny ; but it is no less incontestible that *simple* and *accidental* inflammations of the respiratory mucous membrane may also be accompanied in the young and vigorous animal with similar phenomena. This is simply due to the facility with which pus is produced in abundance in this species of animals.

And again, many veterinary writers separate from strangles, or at least seem afraid to connect with it the pustular eruption, noticed first by Jenner, under the name of *grease* or *sore heels*, which was overlooked for such a long period, and recognized again by Prof. Lafosse, of Toulouse, in 1860, described under the name of *horse pox* in 1863, by my eminent master, M. H. Bouley, and who made it the *essential* and *fundamental* fact, *natural* and *specific* character.

For several years, I have shown to a class of about one hundred and fifty students that there is no strangles without pustular eruptions. It is more or less developed, sometimes difficult to see, but is never missing. Every time it is absent it is not strangles which is present, it is a simple inflammation, not contagious by cohabitation, and not inoculable.

This short introduction is sufficient, I believe, to show how vague and uncertain is this question, already so often discussed, and to what extent the distinctive points of the disease is ignored and poorly described.

It is with the desire to find my way in this dark road that, by attentive observation and experiments of very numerous inoculations, the first amongst which dates back some fifteen years, I have tried to determine the proper name to be given to strangles from its nature and analogy to other affections ; to tabulate what there is really known of its etiology ; to distinguish amongst its external manifestations those which are proper to it ; to isolate these from the phenomena, purely contingent, which are sometimes added ; to discover the causes and their nature, and to prevent them as much as possible, or, at least, to regulate their march.

The word *Gourme*, used in France for a time back (surely

from Soileysel down to our days,) to designate that disease, has no well known origin, or precise signification. According to Bescherelle, it comes from a Celtic word, *gormes*, and means simply pus. It is, indeed, often used with this meaning in human medicine, where it has been applied to many diseases of children which are accompanied by eruptions of the skin. It is with about the same meaning that it has been introduced into our medicine.

With all writers, hippiatric and veterinarians, who took notice especially of the most apparent external facts, strangles of the horse was a crisis characterized by an abundant suppuration.

With variations of details upon the interpretation of the phenomena, such was the opinion generally accepted by Chabert, Fromage, Brugnon and others. This name was in fact in accord with their idea of the disease. It had in fact the advantage, by its general signification, of not compromising the yet unknown nature of the disease.

Some fifty years ago, under the tuition of the so-called physiological doctrine, attempts were made to repudiate the name. Vatel, Rodet, D'Arboval and a few others considered strangles as a simple inflammation, a *rhino-pharyngo-laryngitis*, different from the ordinary angina by its extending to the lymphatic ganglions, to the lungs and even to the stomach. This was one of those unavoidable errors commonly made in natural science, when minds dominated by an absolute idea, try to form every fact upon it. This opinion, however, was soon put aside, or better, was never entirely adopted. It was too much at variance with the facts. The property that *gourme* possesses of transmitting itself to subjects previously free from its manifestations, always prevented it from being considered a simple catarrh of the respiratory mucosæ. It is true, that, to maintain their theory, the authors already named, and Delafond after them, refused to recognize its contagious quality. But such a large number of observations affirmed this purely doctrinal mode of appreciation, that soon older ideas were again admitted. Thus was the word *gourme* taken up again and preserved to our days to designate the disease in question.

The day will come, though, when it will be abandoned. Per-

haps it is already time to cease using it, for its vague signification is not sufficiently precise. A more expressive name would now be preferable.

First, it would conform to the actual tendencies and known processes, and besides it would be a means of removing the confusion yet existing between a specific and contagious disease and other accidental affections having resemblance only by certain accessory phenomena.

It may be said that the Italian expression *cinsorro* and the German and English names *strengel* and *strangles* are insufficient. The first is the translation of the word *gourme* and the other merely that of angina. These last being more restrictive, are yet more inexact, as they seem to assimilate *gourme* to a principal inflammation of the throat.

A proper denomination, better defining the affection, ought now to be employed. This is the first necessary condition to be realized. To denominate and define the same things in the same manner is always the surest way to avoid confusion.

In 1863 W. H. Bouley gave the name of *horse pox* to the pustular eruption of *gourme*. This expression constituted then a very happy opposition to the words *cow pox*, and indicated the origin so long and vainly looked for of the vaccine virus. No doubt at this time one could not see in the eruption in question the entire nature of the affection. This would have been a too radical revolution. In the observation of science, time is always necessary for the truth to develop itself.

For the question now under consideration, I feel satisfied that Mr. H. Bouley would not hesitate to recognize now in the eruption which he described as the complete natural form of the *gourme*, and to regard all that was considered in the part since as the nature of the disease as simple deviations caused by all the influences capable to interfere with the regular and normal evolution. And he would willingly give to the word *horse pox* the sense of *gourme*. The first would, even with advantage, take the place of the second.

Still I do not believe that it would be the best one, in the point of view of comparative pathology. In connection with its limited

sense, it is less in harmony with the nomenclature generally followed in pathology, and seems to isolate a special disease of an animal species from its analogues in other species. For that reason, I believe the gourme of the horse is *variola*.

The greatest part of this paper will, however, be used to establish on as solid a basis as possible, the truth of this claim, already advanced by Gilbert, Dietrich and others.

II.

The *causes* of strangles have been lengthily studied in the treatises on this disease.

As for all contagious diseases, two etiological facts must be examined: the primary development and the transmission by contagion.

The first has not alone attracted the attention of veterinary authors. Most writers have given many pages on the subject. They have, with long detail, mentioned all the local causes likely to bring on disturbance in the equilibrium of the functions. In reproducing exactly the same condition, all have recognized that young age was a condition favorable for its development.

With a few, it is only between two and six years that the disease runs perfectly through in evolution. Earlier it would not have its character proper, and might reappear subsequently. Thus premature, it would not be sufficiently depurative to relieve entirely the organism of predisposition it possesses from birth.

All this, it is unnecessary to say, is purely hypothetical. If, indeed, it is incontestible that the disease is more commonly met in animals from five to six years, it is because at that age they are more unavoidably and for the first time exposed to contagion. At this time, indeed, they are sold to be transported, in raising climates, and are then gathered in various numbers in dealers' stables or other locations. During these changes they have been in markets, at fairs, in public stables, transported in railways, and have in many instances been in contact with diseased subjects.

Let but one of the animals be affected, which is too often the fact, and soon the disease extends to all those, which up to that

time had been free from it. Is not that the reason why horses recently bought are so commonly affected with the disease when they reach their new home.

All authors who have written on the ætiology of gourme, have, however, in repeating that young age is one of the causes of its development, remarked that animals kept in hygienic conditions similar to those in which they were raised, are protected from it. Mr. Zundel, for instance, says: "If horses remain in the conditions of hygiene, food and work similar to those in which they were born and raised, they often remain free from the disease."

The age of four to six years is then not sufficient by itself to give rise to the disease; and I repeat it, if it is frequent at that period, it is because animals are then more exposed to contagion.

As to the opinion consisting to consider equine variola as incomplete, premature in colts of six months to a year, because the change of constitution favorable to suppuration has not yet taken place in them, I have no hesitation to declare wrong. It is an assertion without proven facts. I have seen lately a five months colt infected accidentally by a variolous horse, and in which the disease developed itself in the most marked manner. Generalized eruption on the whole body, laryngo-pharyngeal angina with abundant discharge, suppurative lymphangitis forming a thick cord on the left side of the face, enormous abscess in the inter-maxillary space—nothing was wanting. On no subject could the disease have been better shown, and I have seen it in sucking colts with the same gravity in the symptoms.

It is then not exact to say that it must abort in animals less than a year old, and I feel certain that veterinarians practicing in breeding countries have, like me, seen it very serious in the youngest animals.

If upon animals from four to six years it often assumes an irregular form, it is precisely because they have been contaminated and become sick during the different journeys they were subjected to, being then exposed to change of weather, cold, rain, &c., &c., while being more or less in perspiration, and not because the critical age had arrived. It is surprising that the

union of these facts, so plain and well connected, has been so long overlooked. For, from the affection likely to be more severe in older subjects, as in the point of view of vital resistance, the advantage must be in favor of the older animals.

Another condition connected with the adult age, the growth of the permanent teeth, has been considered as the occasional cause of the appearance of gourme. M. Reynal says this is an opinion generally admitted. According to some practitioners, the condition that the growth of the teeth excites towards the superior chambers of the digestive and respiratory apparatus, is a condition, if not producing, at least exciting of gourme. This manner of thinking, with the idea that the disease is localized or limited to the head, cannot be sustained in our day. It is too well proved that the eruptions may take place over the whole surface of the body, to have like assertions discussed.

If quite often the localization takes place towards the head, it is because an exciting cause of angina has somewhat attracted the specific eruption toward that point. For the same reason that lately I have seen on four horses affected with cartilaginous quit-tor, the eruption manifesting itself in a confluent manner on the affected leg, the growth of the permanent teeth might act in the same way when the disease exists already, but it would not produce it.

Riquet has already discussed the opinion relating to the growth of the teeth, in saying when the growth of the teeth takes place beyond the other conditions of the development of gourme, it gives rise to no difficulty.

On this point, as in many others, it may be said that in place of well established facts, hypotheses have been accepted as satisfactory.

Emigration has always been named as the most efficient cause of that disease. In all papers, discussions, classic works, this opinion is reproduced under different forms.

It has been said that the transport of animals from one country to another without having their constitutions prepared for the changes of climate, quality of air, food, stabling, &c., &c., was sufficient to give rise to the disease. "Those serious and impor-

tant modifications," says M. Zundel, "no doubt produce a change in the proportions of the constituent elements of the liquids of the body, and in the nutritive functions, a change which is manifested by the critical manifestations of gourme." On what does this theory rest? On absolutely nothing. Is it not simpler and more in accordance with observation to look at the movings to which the animals are subjected as repeated exposures to the contagion?

To present this question, is sufficient to have it admitted by all unprejudiced minds.

It has been said that animals prepared for sale by fattening, were oftener and more seriously affected than others.

That they are sicker, it is true; heat in warm stables, lack of resisting power to external influences, render them undoubtedly more impressionable and give to all affections in them a more severe character, but that is all.

But that this produces gourme is doubtful, and has not been established by fact.

Lastly, another influence, the sudden cooling of the skin, has been considered as one of the causes of the disease. It is unnecessary to refute such an opinion. Arrest of perspiration by rains, drafts, &c., may prevent the natural development of gourme, interfere with or possibly prevent entirely its eruption on the surface of the body, and by this fact produce all the common variations that the disease may assume, from the simple angina to the lobular pneumonia; but it yet remains to be proved that they have the power to produce the disease.

To recapitulate, what remains of the etiology of gourme, as found in veterinary works? Nothing which resists the slightest criticism. Must we conclude from this that it can not rise positively in the organism of horses? No; such a conclusion to-day might be hazardous, and perhaps later on looked at as erroneous. The question must yet remain open, as we do not as yet possess any elements for its solution. Such is the truth.

(To be continued.)

VETERINARY SOCIETIES.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

This Association held its first meeting for the session 1879-'80 on Thursday evening last, in the lecture room of the college, Principal D. McEachran in the chair, with a full attendance of members.

In his opening address the President briefly reviewed the past history of the Association since its formation in 1875. It was very gratifying to notice the continued and increasing interest evinced by the members in the meetings. He directed the attention of the younger members to the great benefit they would derive from their connection with the Association.

The papers read being always most interesting, and frequently on subjects not fully treated upon in the regular curriculum, were of great advantage to them all.

The library, containing as it did nearly 300 volumes, and many of them rare and valuable works, was always at their disposal. It afforded him great pleasure to be able to inform them that its numbers were constantly being increased by donations from the friends of the Association. Several volumes had recently been received from Dr. Fenwick, Dr. Liantard and Dr. C. C. Lyford.

In conclusion, he would state that the success of the Association had exceeded his most sanguine expectations, and he would urge upon the members the necessity of continued exertion to maintain its reputation.

The officers of the Association are: Dr. McEachran, F.R.C.-V.S., Honorary President; Wm. Osler, M.D., L.R.C.P.L., President; C. J. Alloway, V.S., 1st Vice-President; Jas. Bell, M.D., 2d Vice-President; M. S. Brown, Secretary and Treasurer; and Wm. Jakeman, Librarian.

A vote of thanks was proposed and carried unanimously to

Drs. Fenwick, Liautard and Lyford, for their kind donations to the library.

The following gentlemen were nominated for membership: F. Torrance, Compton, P. Q.; A. J. Chandler, Coaticook, P. Q.; Messrs. Thomas and Skully, Boston, Mass.; Mr. Dunden, Salem, N. Y.; A. Glass, Philadelphia, Penn.; W. Wardle, Montreal, Que.

At the next meeting (Oct. 23d inst.) Principal McEachran will read a paper on contagious pleuro-pneumonia, a subject that at the present time is one of especial interest, not only to the members of the profession, but to all that are connected with the breeding and exportation of cattle, and Mr. M. S. Brown will communicate a case.—*Montreal Daily Witness*.

REPORTS OF CASES.

TRAUMATIC TETANUS.

BY WILLIAM CUTTING, V.S.

On September 13th last, in the afternoon, my attention was called to a bay mare seven years of age, belonging to Mr. Deumelmans, suffering from traumatic tetanus. The mare ate her grain and hay at noon, but the stableman found a difficulty in getting the bit in her mouth, on harnessing for work. When I first saw her the membrana nictitans was passing backwards and forwards rapidly over the eye, and on raising the head suddenly, covered the eyes completely. I saw a wound on the near fore fetlock joint, and at once attributed the mare's condition to that as a cause. I afterward found that the mare had picked up a bolt in the outside of the off fore foot, between the bar and the frog, near the heel, ten days before this attack. The stableman dressed the wound, as it was thought to be of little or no consequence. This wound healed up, and the animal recovered from lameness, but the man who drove the mare thought something

was wrong with the eyes as far back as the 12th or 13th of September, but as the mare ate well and did her work well, thought but little about it. The mare being placed in my care, I led her a short distance to my barn. I put her in a quiet box. Cleaned thoroughly the two wounds, and dressed with the solid extract of belladonna. Gave her a cathartic ball, as well as I was able with a stick, as the mouth was closed within three-eighths of an inch. I stimulated each side of the spine with strong ammonia liniment, and applied a fresh sheep skin to the back, and covered it with a light sheet. Gave an enema of warm water and soap, and in the evening passed into her mouth a ball composed of soap and seed of

Canabis indicus - - 3 ii.

Solid Ext. Belladonna - 3 i.

and gave by the hypodermic syringe one dram of a solution of atropine, four grains to the ounce. I steadily gave the ball as above three times a day. The bowels responded mildly to the cathartic, and the mare lived till between one and two o'clock Saturday morning, the 27th, when she died. I also tried the action of tinct. nux vomica on the tongue, and from my friend Mink's suggestion, the fluid ext. of conia maculatum. This extract I gave in half ounce doses three times a day, per rectum. I gave considerable gruel the same way, besides which she sucked gruel and white water, but would not take milk. She was placed in slings the third day after coming to my stable. She ate some hay, boiled oats, carrots and green corn-stalks, but in small quantities. I saw no relaxation of symptoms from the time she came to my barn excepting once. Two days before she died, the lips became pliable, so that the animal could use them for a short time, and the eyes were less covered by the membrana nictitans.

At page 47 of the *Veterinarian* for 1855, Mr. James Turner, M.R.C.V.S, London, reported two cases of symptomatic tetanus that occurred in his practice. The first case, a racing mare of repute, "the Maid of Kildare," in kicking at a passing cab entangled her hind leg in the wheel and injured it badly. The case terminated by death the 13th day after the accident. A post mortem examination revealed this state of facts; Finding nothing

wrong with the nerve tissue he turned his attention to the vessels, commencing with the external pastern artery. "This to my surprise," he says, "I found plugged to the extent of an inch and a half with a tough fibrinous deposit of a pale straw color, firmly adherent to the lining membrane of the vessel. The artery was completely impervious, there being no channel left in the center of the plug. Upon laying open the corresponding artery over the inside of the pastern joint, the abnormal deposit was precisely the same, but the obstruction occupied a greater length."

In the second case the hind foot of the animal suffered a severe contusion, with laceration of the integument of the coronet, and slight ligamentous exposure. "Upon examination of the vascular trunks, arteries and veins, from the hoof to the hock, they were found unobstructed and completely pervious throughout, except the inner trunk of the pastern artery, which was obliterated through its whole length, from the hoof to the fetlock joint. The plug or obstructing medium was a white, dense, fibrous clot, firmly adherent to the lining coat of the artery."

Reading these cases, I was curious to see if any such state of facts existed in my case. So, on the carcass being taken away, I obtained the right fore leg, disarticulating it at the humero-radial articulation. On removing the skin I saw that the anterior portion of the pastern joint was bruised, the result, I thought, of pawing in the death agony. Posteriorly a number of yellow patches were present, one of them as large as a half dollar, and several smaller ones, likely caused in the same way. I carefully dissected the pastern arteries, the outside one from the hoof to its union with the metacarpal; the metacarpal artery I laid open its whole length, from the pastern to the humero-radial articulation. The vessel was empty, the lining membrane in a normal condition until I passed below the pastern joint, when I tried to pass a knitting needle, and did so, till I came to the branch artery passing in front of the suffraginous bone, the needle passing in the branch but not in the main channel. From the branch artery to the hoof, full two inches, the channel was impervious; the needle would not enter. There were several clots present adherent to the coat of the artery. First a black one, then a straw colored. There

were three black clots, alternating with straw colored ones, a straw colored one continued to the foot, so that the inside pastern artery was plugged full two inches to the foot, the outside pastern artery was plugged fully four inches, first a black clot, and then a straw colored one down to the foot. The knitting needle I used was a small one, of not more than the thirty-second part of an inch in diameter.

Several things seem me to call for consideration in connection with the subject. Various causes have been pointed out as adequate to the production of tetanic spasm, among which are cold, heat, wounds, bruises, flattening and softening of the heart, the ravages of parasites, shocks to the nervous system and so forth. Amongst these causes may we include thrombosis and embolism as causes? Does tetanic spasm belong to that class of diseases called embolia? Science teaches us now, that fibrine is not a constituent of the blood, but that the elements that under certain conditions produce fibrine are constituents of the blood. Thus fibrine, when it does exist in the blood, is a foreign body, and has no business there. Can fibrine, when it is once produced, be ever restored to its original elements (fibrino-plastin and fibrinogen), which exist separate in the blood? I am inclined to think not, but that if the thrombus or embolus once formed, no known remedy has the power of restoring the blood to its normal condition. Of one thing I feel certain, that in every case of hoof or other wound, intelligent veterinary advice should be obtained at the earliest possible moment.

Every veterinarian of experience knows how rare it is for tetanic spasm to set in if the wounds are properly dressed early after the accident takes place. If this is correct, it would lead to the inference that some peculiar inflammatory action is the cause of clot in the arteries near the wound, and that this diseased condition of the blood is as likely to occur from the simplest as from the most complex wound or injury; therefore the most sensible thing the horse owner can do, in the event of his animal becoming wounded or injured in any way, is to call for competent advice at once.

FRENCH ARMY VETERINARY ORGANIZATION.

DECREE ISSUED THE 14TH OF JANUARY, 1860.

Art. 1.—The number of military veterinary surgeons is fixed as follows :

Principal Veterinary Surgeons.....	5*
First “ “	122
Second “ “	132
Assistant “ “	91
“ “ “ (licentiates)†.....	20
<hr/>	
370	

Art. 2.—The licentiate assistant veterinary surgeons are chosen amongst the veterinarians graduated from the veterinary schools, who, less than 30 years of age, have received good testimonials of instruction and moral character, and have satisfactorily passed an examination of admission before a special commission. They are sent to the school of cavalry to receive, during one year to the utmost, the principals of equitation, and be initiated in the practice of military veterinary medicine and to the regimentary duties. They are classified according to their order of merit, when admitted to the school.

Art. 3.—The places of assistant veterinary surgeons are given to the licentiates who, after the expiration of their time in the School of Cavalry, have passed a satisfactory examination concerning their fitness for the service in the army.

They take rank according to the number of classification of their examination.

The licentiates who fail in their examination are dismissed.

* This number has been since increased to 10.

† Stagiaries—these are sent to the Cavalry School of Saumur.

Art. 4.—The second veterinary surgeons are named, half by seniority, half by choice, from the assistant veterinary surgeons having at least two years seniority in their service.

Art. 5.—The first veterinary surgeons are taken by choice amongst the second veterinary surgeons, having three years at least of service.

Art. 6.—The principal veterinary surgeons are named by choice amongst the first veterinarians, having four years at least of service in their duties.

Art. 7.—The licentiate assistant veterinary surgeons are named by the Secretary of War according to the regulations named in Art. 2, and after taking the engagement of honor of serving in the army for at least 6 years after their leaving the School of Cavalry.

Art. 8.—The veterinary surgeons of other ranks are named by the Emperor. The rules of the law of May 10th, 1834, on officers, is applicable to them.

Art. 9.—The rates of pay of the military veterinary surgeons is fixed as follows :

Principal Veterinary Surgeons.....	4,000 francs.
First “ “	2,400 “
Second “ “	2,000 “
Assistant Veterinary Surgeons.....	1,800 “
Licentiate “ “	1,200 “

Art. 10.—A first gift is made of 400 francs to licentiate for equipment, and a supplement of 500 francs to those who are promoted as assistants.

Art. 11.—Principal veterinary surgeons may be attached as chiefs of the veterinary service, to the staff of the army corps in campaign; they may be annually received missions, having for object the propagation of good methods of hygienic treatment, and to enlighten the War Department on general points pertaining to veterinary medicine, as well as on the scientific merit of veterinarians in the army, and establishing for remounting. One of them is specially attached for the education of the licentiate; the others form a consulting commission.

Art. 12.—In case of war or formation of new army corps, the number of military veterinarians will be increased as the circumstances require.

DECREE ISSUED APRIL 30TH, 1875.*

Art. 2.—The limits of the age for permission to retire, amongst principal veterinarians, is fixed as follows :

First Class Principal Veterinary Surgeons.....	62 years.
Second “ “ “ “	60 “

Art. 4.—The principal veterinary surgeons of 2d class are subordinate to those of 1st class.

The veterinary hierarchy has no assimilation with the ranks in the army ; however, concerning the privileges, they rank as follows :

The First Class Principal Vet. Surgeon after the	Lieut'nt Col.
“ Second “ “ “ “	Major.
“ First Veterinary Surgeon	Captain.
“ Second “ “	Lieutenant.
“ Assistant “ “	Sub “

The composition of Courts Martial called for the trial of military veterinarians shall be the same as for the grades after which they take rank.

ANSWER TO STUDENT.

In 1871 the organization of the French Veterinary Schools was modified by the division of the students into interne and externe, that is, those boarding in the school and those living out—

* The principal veterinary surgeons by Art. 1st are divided in two classes.

side—and by the admission of free *auditors*, either French or foreigners. These were admitted without examination, and required to pay 50 francs quarterly in advance.

As we read and understand the privileges and requirements of these three classes of students, the free auditors enjoy the same advantages as the students as far as lectures and clinics were concerned, but they are not allowed to present themselves for the diploma granted by the council of the school.

SUNDRIES.

TYPHOID FEVER FROM DISEASED MEAT.

An epidemic of typhoid fever, interesting in its ætiology, followed a musical festival at Zurich in May, 1878. Out of some 700 assistants, 500 were attacked by the disease, of whom 100 died. The symptoms could not be mistaken, and the autopsies confirmed the diagnosis. A minute inquiry into the circumstances left but little doubt that the epidemic was due to the use of bad veal furnished by an innkeeper of the place. It may be claimed by those who attribute to general causes the power of originating specific diseases, that the typhoid fever was due to a septic poison present in the veal, depending possibly on a beginning fermentation, which was not destroyed by the cooking to which it had been submitted. On the other hand, as the animal from which the meat was taken was sick, it may be asked whether it might not have been suffering from typhoid fever, although this disease has never yet been recognized among animals. It is a remarkable fact that in 1839 a similar but much less fatal epidemic occurred in a neighboring locality. After a reunion that took place under similar circumstances, 440 persons were taken sick with all the symptoms of typhoid fever. It is probable that in this case also the meat of a sick calf gave rise to the disease.—*Journal de Medecine*.

EXCHANGES, ETC., RECEIVED.

Bulletin National Board of Health, Hospital Gazette, Medical Record, American Agriculturist, Prairie Farmer, Live Stock Farmer, Ohio Farmer, Medical and Surgical Reporter, Turf, Field and Farm, Country Gentleman, Monatsschrift des Veriener der Thierarzte, Revue fur Thierheilkunde und Thierzucht, Bulletin de la Societe Centrale de Medecine Veterinaire, Gazette Medicale, Veterinarian, Veterinary Journal, Annales de Medecine Veterinaire, Journal de Zootechnie, Recueil de Medecine Veterinaire, Clinica Veterinaria, &c., &c.

LETTERS RECEIVED.—J. C. McKenzie, N. H. Paaren.

PAMPHLETS.—Investigation of Diseases of Swine and Infectious and Contagious Diseases.

AMERICAN VETERINARY REVIEW,

DECEMBER, 1879.

ORIGINAL ARTICLES AND REPORTS OF CASES.

LARGE ABDOMINAL HEMATOMATOUS GROWTHS.— CHRONIC PERITONITIS—DEATH.

BY A. LIAUTARD, M.D., V.S.

The ætiology of colics and their complications is a subject which presents itself in a practitioner's calls under different lights, and the true diagnosis of the nature of these disturbances is often a source of hesitancy and difficulty, which are such that often the veterinarian has nothing left to him but to resort to expectant treatment, that of symptoms. The case which is reported under the above heading is presented not only on account of the important and enormous lesions which were found at the post mortem, but also to guard the practitioner against the possibility of an error in ætiology, though in this case it proved to be one of the rarest occurrence.

That diseases of important organs as the liver or the kidneys should have been considered as the cause of the disease of the animal subject to this case, is nothing strange; but post mortem revealed the existence of lesions which, in their nature, as far as we know, have not yet been recorded.

The following history, obtained from the Assistant Veterinary Surgeon of the hospital department of the American Veterinary College, with the post mortem lesions as described by Mr. Zuill, student at the college, will prove interesting.

On the 30th of October, 1879, a black gelding about nine years of age, was admitted to the hospital of the Veterinary College for treatment, with the following history: About a year ago, he was attacked suddenly with mild colicky pains after eating his breakfast; these lasted about two hours and were treated by anodynes and purgatives. Afterwards, every few weeks he had similar attacks, lasting a shorter time, and these were kept on until about two months previous to his admission. About six weeks ago the coachman noticed the animal's belly to be a little fuller than usual, which would return to its normal condition after driving. His appetite became very delicate, and his teeth, being looked at, received proper attention, they being very sharp and irregular. The abdomen continued to increase in size, the animal lost flesh, and after much hesitation on the part of the owner, an aged lady, the poor brute having refused his food entirely, and, in consequence, being much emaciated, she decided to place him under treatment.

On admission, he presented the following conditions: his skin is tight on its body; hairs dull and staring; abdomen enormously distended in his lower part, similar to that of a mare a few days before parturition; pulse fifty-four and very weak; respiration eighteen and thoracic; temperature $104\frac{1}{2}$. On percussion of the thorax, dullness is found over the posterior part of both lungs, dullness over the abdomen on both sides, extending over half of the region; the flanks are hollowed. On auscultation, diminished respiratory murmur over the posterior portion of both lungs, metallic tinkling sound on both sides of the abdomen, and plashing sound on succussion, fluctuation to the palmar surface of the hand when sudden pressure is applied to the opposite side of the abdomen; on the right hypochondriac region a large lump is imperfectly felt; fæces normal, urine scanty and of a dark red color. The visible mucous membranes are pale; the mouth dry; countenance anxious and painful. Diagnosis: ascitis, due to disease of the liver. Prognosis: fatal, on account of the enormous amount of fluid in the abdomen, and of the supposed organic lesion of the liver. Treatment: cathartics, six drachms of aloes, to be followed by diuretics every four hours.

From November the first to the fourth, the anorexia was complete, the animal had great desire for liquids, the abdomen has gradually continued to increase in size, the sheath and the lower wall of the abdomen had become the seat of large swellings pitting on pressure, the pulse had increased to eighty and ninety, respiration to thirty, the temperature to $106\frac{1}{2}$, the purgative had acted freely. On the morning of the fourth, at ten minutes before eight o'clock, he was seen moving in his stall, picking at a little hay; he lay down, and by eight o'clock was found dead, death having taken place without a struggle, his bedding being in the same condition as the stableman had made it a few minutes before.

On post mortem the following lesions were found: An incision was made on the median line, extending from the pectoral back to the inguinal region, and the skin dissected on each side; the left fore leg separated from the trunk so as to expose the side of the thoracic cavity. As this was done the swelling of the subcutaneous cellular tissue of the abdomen allowed the escape of a large amount of yellowish serosity. The muscles of the pectoral region, as well as all those which had been exposed, were of a very pale color, manifest character of the anhemic condition of the animal. The thoracic cavity being open, the lungs were taken out with the heart. The pulmonary organs, which had been much compressed by the displacement of the diaphragm, which extended forward as far as the fifth rib, were, generally speaking, healthy, with the exception of a very small piece of the lower border of the left lung, which showed some grey and red hepatization on a surface about six inches square. The pulmonary veins of both lungs of all sizes were filled with clots of blood of various stages, showing that embolisms of the vessels had gradually taken place by ante mortem clots.

The general appearance of the heart was healthy, the valves of both ventricles were normal, but both cavities of the ventricles and auricles, principally in the right heart, were also filled with ante mortem clots, which extended into the cavity of the large blood vessels of these cavities. The pericardium contained but a little quantity of fluid.

The opening of the abdomen was carried on with much care, to collect as nearly as possible the fluid existing there. This was successfully done, and nearly thirty-two gallons of liquid were collected. This was at first of a yellowish color, clear, but became muddy and reddish towards the end; it was more or less mixed with granular deposits of fibrinous structure. The cavity being laid entirely in view by the cutting of the abdominal walls, the most magnificent lesions were exposed.

Every part of both the parietal and visceral layers of the peritoneum was increased in thickness varying from three or four lines to half an inch. Fibrous deposits were found all over the intestinal canal, over all the abdominal organs, and the posterior face of the diaphragm was considerably thickened by their presence.

The intestines were considerably reduced in size, empty and covered with the produces of that extensive peritonitis. Their interior was empty, and the mucous membrane was pale and presented the folds of its surface as if the animal had died from starvation. Peyer's patches were healthy.

The spleen was quite healthy in structure, except towards its free extremity and over its external surface. The structure of the apex was somewhat softer than the other parts and easily torn. The peritoneal coat was considerably increased also in that part of the organ as much as half an inch.

The kidneys were, in all appearances, healthy, though somewhat pale in color.

On examination, the liver was of a natural color, of natural hardness; its capsule was easily torn and separated from the tissue underneath.

In trying to remove the small colon, in the right hypochondriac region was found floating in the abdomen, amongst the folds of the intestines, a large tumor, hanging to the small mesentery as an apple to its stem, and weighing eighteen and a half pounds, and measuring about thirty inches in circumference. This must have given rise to the suspicion of enlarged liver, as it was felt during life in the right hypochondriac region. Its shape, somewhat ovoid, was, however, irregular, its external surface bosselated

by cysts of different sizes in different stages of organization; some were soft and transparent and contained a clear serosity, while others were hard and contained fibrinous deposits varying in aspect and color, some being dark and black in appearance. On being opened, this large hematomatous growth exhibited deposits of fibrin in different stages of consistency, varying between the recently formed clot and the hardened well organized deposit. In the center was found a large cyst filled with dark recently-thrown-off and quite liquid blood. Here and there were found in the walls of some of the cysts, calcareous deposits, some of which were about half an inch square in size, others much smaller. These were principally found at the point of insertion of the pedunculum of the mesentery.

The stomach having been removed, was then examined. On looking over the part of the abdominal organs, which represent this organ, one is surprised by its enormous size and its aspect. It represents a huge mass covered with a very thick layer of peritoneum pitted as by many cicatrizes or holes. It consists of the stomach itself much shrunken and empty and of an enormous hematomatous growth, which measures fifty-six inches in its large circumference, following the long axis of the stomach, and forty-six in its smaller diameter. This is partly sub-peritoneal—only, but here and there it is spreading through the muscular coat. Towards the small curvature, there is between the peritoneal layer a large clot of recent formation: the tumor divided in its long axis, the walls of the cysts are found considerably swollen in thickness and divided into cells containing organized fibrin in different stages.

The presence of these large tumors is a fact of unusual interest, as, so far as I can find, no cases of similar nature are found on record. By what pathological process they were developed in this animal, at what might looked the beginning and the end of the intestinal canal, is a question which I regret to say the post mortem, carefully as it was made, has not allowed us to make out.

FRACTURE OF THE FIFTH DORSAL VERTEBRA AND OF SEVERAL
RIBS FROM VIOLENT SHOCK.—DEATH.

BY W. J. COATES, D.V.S.

As a case of rare occurrence as to the seat of pathological injuries, the following may prove of interest to the readers of the REVIEW.

A bay gelding, five years of age, belonging to a physician of New York City, was brought in an ambulance to the American Veterinary College Hospital, with the following history: About two hours previous, while driving along in a railroad track, the axle of the wagon broke near to the wheel and the side of the wagon came down with a crash. The horse became frightened, dashed off a few yards and ran into a coal cart with a terrible force, thereby throwing the doctor out of the wagon and the horse on top of him. After the doctor recovered himself, he freed the horse from his position, but could not get him to stand up, as he seemed to be paralyzed. The ambulance was then sent for and the horse brought to my notice.

On admission to the hospital the horse was laying on the right side, his breathing laborious; pulse fifty, full and strong; temperature $98\frac{2}{5}^{\circ}$ F.; he pawed much with his near fore leg. There was no sensation from the tenth rib back on being pricked with a knife. Trying to raise him in slings he would stand on his fore legs, but his hind legs would hang powerless; his neck presenting but little power of contraction, and his head slightly turned one side.

Diagnosis: Fracture of the vertebral column in the posterior part of the dorsal region.

Being informed of the condition of the animal, the owner ordered him to be destroyed.

On trying to expose the seat of fracture from the side of the bodies of the vertebræ, the abdomen was empty, the diaphragm removed, but in the whole extent of the vertebral axis thus exposed no fracture could be observed. The researches were then directed from the annular portion side, and there again

no fracture could be detected. The right fore leg was then separated from the body. On this side the first, second, third and fourth ribs were fractured into numerous pieces. Removing the left fore leg, fractures of the second and third ribs were also discovered. Then cutting off the vertebral column from the middle of the neck back to the fifteenth dorsal vertebra, the whole mass was carefully dissected and a comminutive fracture of the fifth dorsal was brought to view. The body of that bone was smashed in pieces, and some of the bone, crushed in the vertebral canal, was pressing so much over the spinal marrow as to almost cut it right across. The annular part was also fractured, and the long superior spinous process of the bone was separated and loose close to its base. The other organs were all found healthy.

RETENTION OF A DEAD FŒTUS IN A HEIFER.

By M. R. TRUMBOWER, V.S.

HISTORY.—The heifer was running with the herd last November, being about six months in calf, and was observed to show signs of heat, other cattle riding her. The owner separated her from the herd and kept her alone until the following April. In the meantime her abdomen had gradually diminished in size, without indicating any signs of parturition, the animal apparently enjoying good health. In April she was again turned out with the herd. Two weeks thereafter she was seen to strain forcibly and to be uneasy, getting up and down, thick pus meanwhile flowing from her vagina. She was again separated from the herd, but still continued the straining, gradually losing flesh. No offensive smell from the discharge was at any time perceptible nor any apparent pain except at the time of straining, which would only occur immediately after rising to her feet from lying down.

On May 29th I was called to see her. She had for the past two weeks failed in appetite, and on that day the desire to eat or drink was altogether absent; persisted in lying down; reduced to a mere skeleton, almost incapable of getting up without as-

sistance; pulse 80, weak and intermitting; eyes sunken; gums shrunk away from the teeth; breath fetid. Further examination revealed a dead foetus, the head lodged in the vagina, nose three inches from the vulva, which was not dilated, rendering the first introduction of my hand difficult. The uterus was dilated and apparently healthy. The top of the head of the foetus was worn bare to the bone, from chafing against the sacrum; the dorsal vertebrae were loosened from their muscular and ligamentous attachments, and the superior spinous processes bared by friction; hair fast; no evidence of decay anywhere; the muscular tissue—worn to shreds along the back—retained all the strength and compactness of the living foetus; a large quantity of thick pus, of the consistence and color of thick cream, surrounded the foetus. I delivered the calf (after removing the bones of the skull in pieces) with little difficulty. The foetus was well matured. I then removed about two gallons of the pus described. Prescribed ferruginous and bitter tonics, also carbonate of ammonia to be given every six hours. The appetite was regained in a few days, and the animal made a rapid recovery.

The interest of the case centers in the absence of putridity, the change of the membranes into pus, and the complete preservation of the dead foetus.

THE MISUSE OF SLINGS.

BY PROF. A. A. HOLCOMBE, D.V.S.

On the 28th of October I was called to see a fine bay carriage horse, suffering with acute pneumonia of the right lung. Ten days before he had become cast during the night, and was found in the morning completely exhausted from his continued struggles, and entangled in the rope by which he had been tied. With considerable difficulty and assistance he was raised and placed in slings, where he was left until the time of my visit.

The history of his sickness was as follows: Upon the side which had been in contact with the floor were several abrasions which were quite sore at first, but rapidly improved; on fore-leg, the

inner surface of the off-thigh and beneath the fetlock were abrasions that had cut deeply into the skin, but were healing kindly when I saw them. No other injuries were detected. During the first five days his appetite was good; he drank well and had regular movements of the bowels, but the urine—which was excreted in apparently normal quantities—was darkly colored as though with blood. This condition of the urine lasted for a few days and then cleared up.

From a critical examination of the patient I could not determine that he had suffered from any other injuries than those named above, if we except the probable injury to the loins as a cause for the dark colored urine. An external and rectal examination of the lumbar region revealed no lesions nor symptoms of injury at the time I was called.

On the fifth or sixth day the patient began to get worse, the breathing becoming rapid, thirst increasing, the appetite failing, and the animal growing very uneasy in the slings. It was evidently about this time that pneumonia set in. When I visited him I found him standing in slings which nearly raised him from his feet, making efforts every few minutes to relieve the constriction of his chest by advancing the hind feet well forward as seen in taminitis, and then by force of muscular contraction supporting the chest for a few moments free from the tightly-drawn slings.

The heart was beating so rapidly and faintly that it was impossible to count its strokes; the respirations were above thirty to the minute, the temperature at 108 degrees Fahrenheit, and the body bedewed with cold sweat. The extremities were quite cold, the mucous membrane blue, and the breath fetid. In fact, the animal was dying from gangrene of the lungs, probably induced from the misuse of the slings which had been employed undoubtedly with the best intentions.

That more misery could be produced from a mistaken kindness than was seen in this case can scarcely be conceived, while the economy that suggested the calling of a veterinarian only when the animal had reached the period of dissolution, is one that, in this case at least, resulted in disaster.

EDITORIAL

A SANITARY VETERINARY BUREAU.

Our article on the organization of a Sanitary Veterinary Bureau has seemed to meet from one of our friend contemporaries, the *Medical Record*, not as kind a reception as past relations had encouraged us to look for; and the notice which it gave to it in its issue of November 8th, ult., receives an answer from one amongst us, which we publish to-day. At first we felt much disappointed in reading the article; but on second consideration we looked upon it as a good move on the part of our friend co-editor, and we are now somewhat inclined to thank him for the trouble he has taken in bringing the subject before the medical profession, to which we have accustomed ourselves to look for support, assistance and recognition.

Few physicians, we are sure, will consider the subject in the same manner as the *Medical Record*, and we have every reason to believe that its sarcastic remarks will not be accepted by the large majority amongst the members of the medical profession.

The question, whether or no there are enough veterinarians of education in America to organize a Sanitary Veterinary Board of Health, is one which, we believe, we are better able to judge of than the physician—and in supposing that we are but a few, we are to learn yet that a large number is essentially necessary for the work to be done. We know of some States where contagious epizootic diseases have been got rid of by *one single veterinary surgeon*, and those States have remained free from such diseases to this day.

As to the condition of the standing of veterinarians, the subdivision made by the *Record* is also essentially erroneous. What does he mean in saying that “we have in America but one veterinary college which exists under legislative sanction and which can grant genuine diplomas.” So far as we know, there are three schools *legally* incorporated and *legally* authorized to grant diplomas. Whether these diplomas are obtained, as regular medical practitioners generally understand, is not the question; these degrees are nevertheless genuine.

The article we have referred to, we are inclined to believe, was written in connection with the action of the United States Veterinary Medical Association at its last meeting, by which a committee was appointed to draw a set of resolutions to be presented to Congress, urging the necessity for measures to be taken in relation to contagious diseases of domestic animals.

According to the appointment of said committee and the power granted to it, the following gentlemen met in New York on the 11th of November, viz.: Prof. A. Liautard, M.D., of New York; Prof. A. A. Holcombe, of New York; C. B. Michener, of Pennsylvania; E. F. Thayer, of Massachusetts—members of the committee, and, by special invitation, Prof. James Law, of Ithica, N. Y.; A. Lockhart, of New York; C. P. Lyman, of Massachusetts, and Prof. J. L. Robertson, M.D., of New York. Dr. N. H. Parren, of Chicago; W. T. Corlies, of New Jersey. F. S. Billings, of Massachusetts, and J. B. Myers, of Cincinnati, were unable to attend, but some of them at least notified their willingness to endorse any action the committee should see fit to recommend.

The object of the meeting and how the Sanitary Veterinary Bureau should be constituted, were first discussed. After many remarks from the different members present, it was decided that it would be better to suggest an independent organization, rather than to have it connected with the Agricultural Department at Washington, or with the National Board of Health, and after the appointment of a sub-committee for the drawing of the resolutions, the following were unanimously accepted at a subsequent meeting held on the 25th of November:

CONTAGIOUS DISEASES OF DOMESTIC ANIMALS.

PETITION,

Presented by the United States Veterinary Medical Association.

To the Honorable, the Congress of the United States:

Whereas, It has been shown that different animal plagues prevail to a disastrous extent among the live stock of the United

States, and that many millions of dollars are annually lost to the nation from this cause.

Whereas, Several of the most redoubtable of these plagues are now restricted to circumscribed localities, but threaten speedily to extend over wide areas, where, from the mingling of herds on unfenced ranges, like the plains, they must become permanently domiciled, at an immense yearly loss that will steadily increase with the constant advance of agriculture, and the increase of our live-stock.

Whereas, The unfenced stock ranges of the South and West are at the source of the traffic in live stock, and their infection must determine the infection of all the channels of the traffic (cars, boats, yards, &c., &c.), and of the Middle and Eastern States.

Whereas, Several of these animal plagues have already led different American and European countries to place embargos on our live stock, which will be maintained so long as these pestilences are allowed to exist in our midst.

Whereas, The extinction of these animal contagia is of incomparably more importance to the Western stock raising States than to the Eastern, even though they may be at present exclusively confined to the latter.

Whereas, It is not probable that all the infected States will of themselves go to the trouble and expense of stamping out these pests, in which they have so much less pecuniary interest than other States, which are as yet unaffected.

Whereas, Certain of the most destructive of these pestilences are exotics to the stock exporting States, and can be effectually and permanently eradicated from them.

Whereas, A large number of animal diseases are due to contagia or to parasites that are communicable to man with equally disastrous results.

Whereas, There is constant danger of reimportation of the same and of other exotic animal plagues, unless a proper inspection and quarantine of imports shall be inaugurated; and,

Whereas, The restriction and extinction of these diseases can be best accomplished under the direction of the veterinary profession, who alone have made a special study of these epizootics,

and are acquainted with the laws of their propagation and development.

Resolved, That we, the undersigned, members of a committee of the United States Veterinary Medical Association, appointed for that purpose, do hereby respectfully petition that the Honorable the Congress of the United States shall establish a Veterinary Sanitary Bureau, whose duty it shall be to advise Congress as to what measures shall be necessary to control, restrict, or eradicate any contagious or infectious disease affecting the domesticated animals; and,

Resolved, That in view of the urgent necessity for the eradication of the *Lung Plague* of cattle from the United States, the restriction of "Texas Fever" of cattle to those Southern States in which it is already domiciled, and the protection of our flocks and herds against pestilences that may be imported with foreign stock, Congress is further respectfully requested to appropriate a sufficient sum of money to enable the Veterinary Sanitary organization to deal at once and effectually with these important matters.

It may not become us to say whether this petition will be of any avail, or if any notice will be taken of it by our honorable members of Congress, but at any rate it will show to the country at large and to our friends of the *Record* that there is unity amongst the members of the veterinary profession; and that, if the names attached to the petition are of any value, there is amongst the veterinarians of America sufficient power to organize a Veterinary Sanitary Bureau competent to deal with the contagious diseases of our domestic animals, from which the immense revenue and wealth of the country have to sustain such enormous yearly losses.

This petition will be printed and distributed all over the country, and we feel no hesitancy in saying that, coming from all the States of the Union, it will not fail to be recognized as the expression on the part of a large number of our countrymen of an important need, which we can no longer afford to overlook, notwithstanding the pretended difficulties which are said to be in the way.

PREPUCIAL CALCULI.

One of our correspondents, Mr. Trumbower, sends us a specimen of a very large prepucial calculus, and gives in his letter, which will be found in the pages of this number of the *REVIEW*, the history of the case.

These concretions, which are found in the sheath of the horse and pig, exist also in the ox and sheep, and are concreted around the hairs surmounting the prepuce. They consist of masses of phosphate ammoniaco-magnesian, oxalate, and carbonate of lime, mixed with organic matter of a very offensive and peculiar odor.

The specimen, which we have received, is the largest which was ever brought to our consideration, and in connection with the prevailing existence of those concretions and the nature of the water drank by the animals thus affected, we would suggest the propriety of a minute examination of the condition of the urinary apparatus, looking for urinary calculi in the bladder, or the urethra, as there might be found the starting cause of these accumulations.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME; OR, HORSE VARIOLA.

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

BY M. L. TRASBOT.*

(Continued from page 336.)

III.

The only certain and undeniable cause of the appearance of gourme, the one whose efficacy is materially proven by good, positive facts of clinical observation and direct experimentation,

*Translated by A. Liautard, M.D., V.S.

is contagion. There is certainly no veterinarian who has not had several occasions to observe these facts. On this point, truth is definitively granted to science.

Therefore, it is a fact which must have seemed incomprehensible to all attentive observers, that such educated men and able practitioners as H. D'Arboval, Vatel, Rodet and Delafond have ignored the contagious property of gourme, specially when all those who came before them—Gilbert, Sacco, Gohier and Toggia—had so well established the fact by considerably numerous observations, and even by experiments of incontestable results.

This error, however, was easy to explain. Two causes have contributed to give rise to it and to propagate it for a certain time: the first was the influence upon almost all minds of the absolute doctrine of Broussais; the second, the belief that all inflammatory diseases of the anterior respiratory passages in the young horse was gourme.

One considered as pathological entities a great number of specific diseases, virulent or infectious; and the other, in allowing to consider as not contagious by cohabitation certain angina, always believed to be gourme, seemed to furnish facts for the support of the theory. No more hesitation then to generalize and formulate a law opposed the one that no one before had thought to doubt. It was overlooked that things entirely different were mixed up, a simple inflammation and a specific disease. The numerous examples of propagation were no more considered. It was so easy to connect their development with the influence of all worthless causes, that there was no difficulty to explain them. Still we must acknowledge that this idea of the non-transmission was never universally adopted. Notwithstanding the authority of the names above mentioned, many practitioners, the majority even, continued to consider the disease as contagious. Seeing it daily communicating itself in such evident manner, they soon left aside all other assertions *à priori* to believe on the clinical proof of facts. And thus there remained no one to convince.

However, as this idea of the non-virulency was strongly argued, it has seemed to me proper to mention it, at least to show to what extreme judicious minds may allow themselves to be

blinded under the power of a systematic law, accepted without discussion, because it is formulated by a man of immense talent and great power of persuasion. This error, born from the doctrine of Bronssais, was not the only one it gave rise to. How many more enormous by their consequences, can be traced to it.

Specially in therapeutics. What excess was not reached when almost all diseases were treated by abundant and repeated blood-lettings?

In the future and even from to day, it may be said that similar systems would have no chance of long successful life. No matter how great the talent which might present and defend them, they would soon fall to pieces in presence of the control of experimentation.

The definitive application of the experimental method to the study of biological science, must in future render these mistakes, if not impossible, at least only momentaneous. By it, all these doctrines, based only upon more or less ingenious speculations, which often conceal their insanity under the greatness and elegance of their form, will soon be wiped away.

Simple, precise and well-circumstanced data, is what a sure method teaches us to exact first of all as scientific materials. It shows, besides, that a single, positive fact, obtained by an experiment carried on according to a severe determinism, has an absolute signification that no theory can infirm. All those, whose laws are contradicted by a single experimental result, are false or incomplete, and must be thrown aside. Consequently, from the day, when it was well observed, that gourme had been communicated to a healthy horse by either placing it alongside a sick one, or, better, by inoculating him, one can affirm positively that this disease is contagious. The proof of the correctness of this affirmation is complete and irrefragable, and no one to-day would think to express a doubt on this point. It would then be superfluous to insist to firmly establish a truth which no one would contest.

The only question which really remains to resume here is that of the various mechanisms by which the contamination may be effected. In truth, all are known, but not collected in a single

and complete group. Indeed, the majority of authors have studied on one side the contagion of *gourme*, considering only, without thinking, its deviation, and on the other that of the horse-pox, equine virus, etc., that they regarded as a peculiar affection. Except M. Henry Bouley, who recognized the eruption first (*herpes phlyctenoides*) as a kind of epiphenomena of *gourme*, and who, though he did not write it, in 1863, do not hesitate to look to horse-pox as the characteristic sign of the disease, no one yet that I know, has seen the intimate union existing between the two: and no one specially to this day, has expressed in a firm manner the idea that the horse-pox or variola of horses is the natural and regular form of the disease. One could not then gather in a single paragraph what remained separated in the mind. To-day it is not so. The time has come to collect together these various forms of the same thing: *gourme* of old and modern writers, *grease* or *sore heels* of Jenner, *pemphygoid rhinitis* of David, *horse-pox*, variolous diseases of the horse described by Petatard, *lymphangitis*, called flying farcy; for all this is *gourme*.

The study of the transmissibility of this disease must then comprehend all these phases of the question and collect together the documents spread here and there. And, considered in this synthetical manner, taken under this light, which with perfect conviction I consider as the truth, it becomes easy and can be briefly presented.

The easiest mechanism of communication of the disease to understand is incontestably the direct inoculation. In taking the serosity exsuding from the surface of pustule deprived of its epidermis, and introducing it under peculiar conditions into the organism of a horse, until then free from the disease, one will surely transmit it. Repeated indefinitely and executed in similar conditions, the experiment will always give the same result. This introduction may be realized by numerous ways.

One of the most eminent masters of veterinary medicine, Professor Chauveau (of Lyons) in different series of experiments instituted to study the transmission, regeneration and pathological anatomy of vaccine, has applied about all that can be imagined.

From his remarkable labors some were communicated to the Academy of Medicine in 1865, 1866 and 1868, others in the Annales of Dermatology in 1871, and in the Journal of the School of Lyons in 1877. This last, Contribution to the Study of the Original Vaccine, Comparative Remarks upon the Vaccinogenous Aptitude in the Principal Vacciniferous Species,* is, properly speaking, the relation of all the forms of inoculation tried by the author; and is the resumé of the results he has obtained with each mode, not only in the horse but upon the ox. They are all so well known that to mention them is to remind all of the results obtained. As, however, many of the facts carried with them a real instruction, it may not be useless to cite them briefly.

In a first paragraph, after some consideration upon the natural form of the eruption and its ordinary site, M. Chauveau gives the negative results obtained by transfusion of the blood. This liquid, taken from affected animals in the *period d'etat*, and injected in the veins of two healthy animals, did not contaminate them. A month later sub-epidermic inoculation on these animals proved successful. This is undoubtedly one of the most demonstrative experiments. For, though negative facts have not an absolute value, when two cases like those are reproduced alike in different experiments, they furnish the elements of a scientific certitude as completely as possible. It must then be admitted that at the *period d'etat* of the disease the blood is not virulent. Perhaps it would not be so, if one would experiment with the blood at the *period of eruption*, at the time when this will begin?

To this day, no one to my knowledge has yet realized this experiment, and it is doubtful if it will ever be, on account of the difficulties it presents. There is consequently one point to reserve on this question.

Still it is true that the transfusion of the blood would always be an unsatisfactory and bad means to communicate the disease to a healthy subject. M. Chauveau has proved, however, that in virulent affections, others than those which are septic, of

*Contribution à l'Etude de la Vaccine Originelle, Recherches Comparatives sur l'Aptitude Vaccinogene dans la Principales Especies Vacciniferes.

course, the blood was poor in virulent matter. It was known long ago that, to succeed in inoculating sheep with small-pox, or even vaccinate children, the serosity must be clear and not mixed with blood. This last liquid was never to be used exclusively.

The experiments of M. Chauveau have then well confirmed the facts obtained by clinical observations.

A second paragraph of his memoir relates the numerous experiments of sub-epidermic inoculation, always followed by success upon animals subject to the disease. The mode is, consequently, not only the simplest but the surest. At this point, M. Chauveau observes that sometimes and frequently upon very young subjects, the local is accompanied by a generalized eruption, and as proofs of the correctness of this opinion he cites two well demonstrated cases.

Though hesitating to differ in opinion with such an expert and distinguished experimenter, I must say that I have always seen the eruption generalized on animals affected for the first time. It is more or less abundant and easily seen, but never missing. As well as in inoculating the small-pox to sheep, the distemper to pups, and even variola to man, one communicates to the inoculated individual a general affection, as well by the inoculation of its variola proper or horse-pox, one gives to the horse a disease whose eruption is not limited to the points of inoculation.

I will return to this question later. For the present it is well admitted that inoculation performed upon a healthy animal gives him surely the disease. Incontestable and uncontested fact.

As to the effect of inoculation upon animals previously affected, it is generally negative. In the cases where it is positive, it is only when the first attack took place for some time past, and yet the development of the pustules is limited to the points where the virus has been applied. I have often tried to inoculate a second time a horse which had already been so treated several months previous. It would, however, be an error to believe that this recidive cannot take place. M. Chauveau cites several examples. All veterinarians have seen it, and for myself I have succeeded in obtaining handsome pustules on a five years old horse, which I inoculated also successfully when one year old.

Recidives may then be observed, and that is not in contradiction with the general data found in similar eruptive diseases. The variola proper to man, to which Jenner has so happily substituted that of cow, under the shape of vaccine, has quite often manifested itself twice on the same individual. This variola of second manifestation, named varioloid on account of the relative benignity, was nevertheless true variola. It was contagious like the other and capable of assuming all its seriousness when communicated to a subject as yet free from its effects.

It is then not surprising if gourme may recidivate, when an animal affected in a far back period is placed in an infected center or inoculated a second time. This, I repeat, is not in contradiction with what is known since a long time. But from that, to admit that it may reproduce itself four or five times in the same animal with the change of the seasons, etc., there is no consistency of relation whatever.

Because anginae, for instance, have been observed for five or six years successively at the same epoch and under the same causes, acting on the same individual, is it to follow that these were always *true* gourme? Evidently, in these peculiar cases, a simple inflammatory disease was taken for this specific affection. We know that all accidental inflammation developed in any tissue predisposes it to a return of the same nutritive trouble. It is then very natural that some animals affected with angina at a given time, be affected alike much easier than others under the influence of an exposure to cold; but this is not gourme.

Therefore from what has been said above, it is proved that

1. The serosity of the pustules of the horse-pox or gourme inoculated to a horse, which never had the disease, gives rise in him to a generalized eruption. This was produced upon six subjects which I had watched since birth and whose antecedents I knew.
2. The same inoculation performed on an animal cured of the disease only a short time since, remains without result.
3. Upon an animal, which has had the disease for a long time past, the inoculation gives sometimes a positive result, but never as complete as in the first attack. Then most generally the pustules are developed exclusively upon the points where the virulent liquid

has been deposited. When the eruption is generalized it is light, and the pustules are remarkably smaller. Such are the results obtained by M. Chauveau and from the far less numerous but not less satisfactory experiments I have made.

To these I would add a fourth conclusion. The repeated apparition of an angina does not implicate at all that there is a recidive of gourme.

I have already said that M. Chauveau has employed several other modes of experiments, whose results I must indicate briefly, as they have considerable importance to elucidate the problem now before us. In his attempts of vaccinal infection by the respiratory passages he has failed. "In making horses whose trachea was open by a small trocar, inspire dust of dry vaccine," he sometimes obtained pustules on the lips and on the nose. "But," he says, "the positive results were rare, though the experiments were numerous."

In giving in beverages a notable quantity of vaccinal matter, he has obtained in two *young horses* the two finest generalized eruptions he ever saw, and besides these two has had numerous failures.

In connection with this series of experiments of inoculation by the digestive apparatus, I may be allowed to ask the eminent profession a question which, I desire to state, has no critical object in view. Is it sure that, in the special cases a direct inoculation, in consequence of the contact of the liquid with the lips and the mucous of the nose, has not followed? When arrived in the stomach, is not the virus destroyed by the gastric juice whose function is precisely to dissolve animal substances? In other words, is it by internal absorption that the virus penetrates the organism? To refute this objection it would be necessary to obtain a positive result in injecting in the œsophagus the virulent liquid, thus avoiding its contact with the lips and the pituitary membrane. Has some one followed this mode? I have injected for several days a bull and a cow with the liquid of pleuro-pneumonia, but have not produced the disease. This I know is not sufficient to infirm the law of transmission of a virulent disease by intestinal absorption.

Still, as long as positive facts are wanted, this law will not be

immaculate. In admitting that tuberculosis, for instance, is transmissible by this way, one is not justified to conclude in the result for all other affections, specially for the horse-pox. It seems to me then, that the certainty of vaccinal injection, through the digestive organs, is not yet surely established; that other new experiments are necessary to place it on undoubtful ground.

By the injection of vaccine in the subcutaneous connective tissue, M. Chauveau has seen in all subjects, without exception, at the point where it was done, an inflammatory tumor resolving itself soon, and upon *a few* a generalized eruption of vaccinal pustules.

Injected in the lymphatic vessels of eleven old horses, the vaccine has given a generalized eruption in four. Similar injections in the veins in twenty-seven animals were followed by positive results in eleven cases. The young subjects gave the most success.

All those experiments, whatever the number of positive results may be, as one alone in each series would be a certain proof, establish with certitude that the disease may be communicated by injection of the virus under the skin in the lymphatics or in the veins. This is incontestable.

What were the causes of the quite numerous failures observed? M. Chauveau looked into them.

Thinking first that the vaccine which he used might be of bad quality, he convinced himself that it was not by inoculating with success and comparatively other animals. Then he thought the animals were not subject to the receptivity of the virus. He soon had to throw this idea aside, as he observed that, in the subjects submitted to the sub-cutaneous intralymphatic arterial or venous infection, the re-vaccination with vaccine whose quality was known, failed also as well on those who had presented no symptoms as on those which had shown eruption after the injection.

He concluded that all had received the same impression from the first introduction of the vaccine, that there had not been any negative results, that the infection of the economy had taken place in the same manner on each animal. According to his idea,

there was variable only the exanthematous appearance, sometimes none, sometimes reduced to a single pustule, now localized on the naso-labial region, and again disseminated all over the body.

This manner of considering, however, I do not believe sufficiently true to be accepted. I say so without hesitancy, as I am convinced M. Chauveau will appreciate this as merely the desire to arrive at the truth.

The re-vaccination he has performed, proved incontestably that the subjects which received the injection of vaccinale serosity, were all destituted of receptivity for the disease, but not that those in which the injection had produced no apparent effect, possessed really this receptivity at the first experiment. For, as he remarked himself, it is difficult to admit that the introduction of a virulent liquid in an organism, being a favorable ground for the evolution of the disease, may impress it in some peculiar manner without showing it by appreciable sign. And still he thinks that the injection of vaccine, which had produced no eruption on a certain number of animals, has destroyed in them the aptitude to contract the disease. I repeat, it is not proved that they possessed this aptitude at the first experiment; but what makes M. Chauveau believe it is, that on all the animals which were not submitted first to the experiment and which he vaccinated comparatively by sub-epidermic insertion of the same virus, he has seen handsome pustules of vaccine; but this is not yet a sufficient proof. He may have been unfortunate in his experiments; he may have had, in the series of animals vaccinated directly with the lancets only, subjects which to that time had remained rebels to the effects of the disease, or had been affected a long time back, likely then to take it again: and, on the contrary, find in the other series where the experiments of injection, inspiration and sub-cutaneous or vascular injection were followed, a number of individuals already protected by an anterior attack (not of long previous epoch) of the disease. M. Chauveau does not pretend that one inoculation of horse-pox must necessarily be followed with success. If he re vaccinated shortly after, the effect is none. I will add that it is the same, if he vaccinated when just cured of gourme. Not only the immunity resulting from a

first vaccination or of the disease contracted by cohabitation protects the animal for a certain time, but even sometimes and possibly often (point yet to be lightened) in a permanent manner.

(*To be continued.*)

SOCIETY MEETINGS.

MEDICAL ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

The first meeting of this Association, session 1879-'80, was called for Wednesday evening, October 8th, 1879. The President and Vice-President being absent, the meeting was called to order by the Secretary, Dr. R. A. McLain, who presided during the exercises. The officers elected for the ensuing year were: President, Prof. A. A. Holcombe; Vice-President, Mr. Geo. H. Bailey; Secretary, Mr. T. C. Cowhey; Treasurer, Mr. M. Bunker.

It was determined to hold regular meetings of the Association once a week, at which some member of the senior class should present and defend a paper on the subject allotted him by the Faculty of the College at the close of the last session. The first regular meeting was held on Friday evening, October 10th, at which time a paper was presented by E. R. Wing on "Distemper in Dogs." At the second meeting T. C. Cowley read on "Hog Cholera." At the succeeding meetings the following papers were presented in the order named: W. H. Hornblower on "Differential Diagnosis of Colic," H. B. Boyd on "Spavin," W. T. Zuill on "Tetanus," D. W. Cochran on "Shoeing the Healthy Foot," H. F. Foote on "Veterinary *versus* Human Medicine."

TETANUS.

[*Extracted from a paper read before the Medical Association of the American Veterinary College by M. Zuill, of Bermuda, W. I.*]

Tetanus in the Island of Bermuda is without doubt the prevailing disease amongst both man and beast, and it not unfrequently takes on an epizootic or enzootic form, as was the case

in 1874, when wounds of every part of the body, of every kind, degree, and extent, from a slight cut or saddle-gall to the most serious surgical operation, was followed by this disease. Even the physiological process of shedding the milk teeth, as well the simple bruising from the whip-lash, have been attended with this important sequel. During the season above referred to many people died from this disease induced by such trivial causes as the extraction of a tooth, cupping, or the paring of a corn, and D. Outerbridge related a case to me in which a negro was so frightened from lacerating his thumb with a broken china dish, that he was immediately seized with convulsions and died from tetanic spasms in fifteen minutes time. Our climate there seems to exercise considerable influence in the production of this disease, and that it should do so, may be understood when it is known that during a period of twenty-four hours, we frequently have several of the most marked changes of temperature and weather. In some instances exposure to cold and dampness is followed in a few hours time by acute tetanic symptoms, and lambs have been seen so rigid from the spasms that their bodies could be raised and held horizontally by simply grasping them by the feet.

Regarding the treatment of this disease in Bermuda, Dr. Theodore Outerbridge, resident Veterinary Surgeon, has been most successful in using belladonna in full doses. Purgatives are required in very large doses, while belladonna applied in plasters over the entire length of the vertebral column is believed to be attended with favorable results.

Among the negro children of the West Indies one form of this disease is known as the "nine-day-sickness" or "jaw-fall," from the fact that usually on the ninth day the muscles heretofore affected with trismus relax and allow the lower jaw to drop upon the chest. In Jamaica about fifty per cent. of the negro children die from this disease.

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY.

The first weekly meeting for the season of 1879-'80, of the above Society, was held in the lecture-room of the College on

Friday evening, Nov. 7th, Prof. Smith, President of the College, occupying the chair. Fifty-nine new members were enrolled. After introductory remarks by the chairman, pointing out the benefits to be derived from these meetings, the election of officers for the ensuing session was held, resulting as follows: Mr. J. P. Whitehead, Delaware, Ont., Secretary; Mr. B. B. Page, Chicago, Ill., Treasurer; Mr. R. Riddell, Cobourg, Ont., Librarian; Mr. G. Dunphy, Assistant Librarian. Mr. Whitehead communicated a case of contused wound, which gave rise to an instructive debate, which was followed by the chairman's address; after which the meeting adjourned.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The fortnightly meeting of the Montreal Veterinary Medical Association was held in the lecture room of the College, on Thursday evening last, November 20th, Professor McEachran in the chair.

After business of Association was finished, the Chairman called upon Mr. Peter Cummings to read his communication on Superficial Necrosis of the Os Pedis.

Mr. Cummings described the case in full detail. The reading of the same was listened to with great interest by those present.

Mr. Charles Ormond, of Milwaukee, read a very interesting paper on Bone-Spavin, in which he evinced a more than common knowledge of the nature of this disease, the causes on which it depends and the changes that take place in the joint. In his treatment he described a method much practised by his father, Mr. W. M. Ormond, of Milwaukee, by which he claimed to be more than ordinarily successful in restoring the animal to usefulness, viz., cauterization of the joint by a pointed hot iron, inserted between the bones, by which ankylosis was produced.

A most animated discussion followed, in which the whole question was fully and intelligently discussed, the majority favoring as more rational the plan taught by the President, of firing and blistering completely around the joint.

The notorious prevalence of spavin in horses in Canada,

especially in the poorer parishes, where proper attention is not paid to the selection of breeding stock, was fully commented upon. Where spavined horses or mares are used for breeding, this disease is very common, and the losses entailed by rearing worthless animals were incalculable. Too much cannot be said to urge farmers to stop breeding from unsound animals.

The meeting was one of unusual interest.

The next papers, to be read on December 3d, are on Tuberculosis in Cattle, by Mr. William McEachran, and one on Veterinary Dentistry by Mr. J. B. Green, Ohio.

CORRESPONDENCE.

Editor Veterinary Review :—

In the *Medical Record*, bearing date of Nov. 7th, 1879, appeared the following observations regarding the establishment of a National Veterinary Sanitary Bureau :

“ At the general meeting of the American Veterinary Association, held recently in this city, a proposition to establish a National Bureau of Veterinary inspection was made. It was proposed that the bureau have similar powers, as regards animals, with those possessed by the National Board of Health. The disease which, it is thought, more especially calls for such an organization is pleuro-pneumonia. It is urged that recent events have shown how valuable it would be to large commercial interests to have a central bureau that might keep cattle dealers and shippers constantly informed as to the prevalence of contagious diseases. Such an arrangement would prevent panics and render impossible the prohibition of American cattle by European governments upon mere sensational reports.

“ It is, on the other hand, said that such information can be secured without government aid. Furthermore, the present status of Veterinary Medicine is so undefined that a National Bureau would not have much more of legitimate professional basis than a National Bureau of Barbers to keep themselves informed upon syecosis. There is in this country only one Veterinary College which exists under legislative sanction, and which can grant genuine diplomas. Veterinary practitioners, therefore, are composed of three classes: persons who have graduated from foreign and one regular home school; persons who have graduated from other home schools and have received diplomas which are virtually only certificates; and third, persons who have no regular education whatever.

"It is feared that the establishment of a National Bureau out of these elements would produce endless quarrelling, without receiving any valuable results."

When unusual power is developed in the hands of one man from a concatenation of circumstances that are but in part dependent upon that individual's efforts, it becomes a weapon dangerous in an inverse ratio to the sense of justice with which he employs it. This control of power is usually sometimes imperceptibly attained by the editor of a widely circulated paper, and the influence exercised by his expression of opinion is disproportionate to its real value. A wilful or unguarded misstatement may under these circumstances result in irreparable injury, simply from an inability upon the part of the sufferer to reach with successful contradiction, all the channels that have been contaminated by statements coming from an assumed respectable and trustworthy source. When such injustice is done through want of forethought, the greatest reparation that can be rendered is entirely within the control of the editor, while that which is irreparable can be forgiven by the injured when he learns there was an absence of motive; but when the editor of a scientific journal designedly stoops to malign a sister science, simply because her votaries are, as yet, numerically weak, it exhibits a development of unwarrantable bigotry that is a disgrace to an enlightened country in this period of the nineteenth century.

That the *Medical Record* possesses the power to render strong, if not successful opposition to any measure that may relate to things medical, cannot be denied; and that its remarks, quoted above, were intended to cast opprobrium on the veterinary profession, seems equally as apparent.

What the necessity for such injustice may be, does not seem apparent, nor is there, so far as outsiders can comprehend, any worthy object to be attained. The veterinary profession *can*, *must* and *will* eventually reach its rightful position, inferior to no other, and it now meets with an opposition sufficiently difficult to be overcome, in the prejudice which affects the minds of the general public from their lack of knowledge of its importance, without having this supplemented by unjust stricture from mem-

bers of the medical profession, who, of all others, should be best able to understand the truth of our claims and the first to concede us our dues.

Comparisons are usually the most odious when founded in unpalatable facts, and it was probably owing to his memory of professional forefathers who, as Greek slaves, were keepers of the Roman bath and barbers, that he made reference to their vocation and deficient knowledge of dermatology.

Whether or not he entertains any reverence for these progenitors of his, or whether they were properly acquainted with the nature and general prevalence of "sycosis" amongst the citizens of Rome, does not appear, but it cannot be denied that their knowledge of surgery excelled that of their self-assumed superiors, who scorned with contemptuous indifference the claims which these votaries of a struggling science had upon the practitioners of medicine and the State.

Had it not been for this intolerant bigotry which supported centuries of persecution and oppression, the history of human surgery might have been more glorious than it is. That veterinary surgery should meet with a kindred experience at this time and in this country, so noted for its rapid progress, is almost beyond the understanding of one who is acquainted with the history of the past.

The statement that "the present status of veterinary medicine is so undefined" affords no just grounds upon which the claims of the profession to render important service can be derided, nor is it a sufficient pretext for opposition to our endeavors to gain just recognition at the hands of Government.

The virtue of the medical profession is not entirely above reproach, if we may judge from the opinions expressed by the majority of her practitioners, and the elements of her composition are not so commendable as might be inferred from the *Record's* strictures upon the veterinary profession. We need not go beyond the confines of New York city to find practices perpetrated under the wing of the medical profession that would put to the blush the barbers of any age. The profession, as a whole, is composed, not of three, but of five classes: First are the regular

graduates in allopathy from respectable schools; second, the followers of Hahnemann, who are looked upon by the allopaths as a lot of fanatics; third, practitioners who have received their diplomas from schools that are a disgrace to a civilized nation; fourth, practitioners who, after a prescribed number of years of practice (?) are licensed by a State or County Medical Society; fifth, those who have no education or professional recognition and are empirics in every sense of the term.

Is this a respectability that permits of any boasting or warrants the throwing of stones? Does the veterinary profession contain any elements that can compare with the moral degradation of thousands of human practitioners? It would not be claiming much to assert that, taken as a whole, the veterinary profession presents the better showing. We do not claim any sympathy for the irregularity of composition of our profession, nor do we intend to say aught against the respectable and representative portion of the medical profession, for they undoubtedly regret their present unfortunate position and desire something better, yet we would suggest that an effort be made to remove the beam from their own eye ere they seek to deride the presence of the mote in the eye of their weaker neighbor.

The regular members of the veterinary profession are fully conscious of the obstacles presented by the presence of empirics within their ranks, and they know, what the *Record* does not seem as yet to have learned, that kindly recognition of true worth and the rendering of impartial justice, by respectable members of all the sciences, will soonest and most effectually remedy the evil.

That a National Veterinary Sanitary Bureau could not be established from the ranks of the regularly qualified alone, as is assumed by the *Record*, seems to be an unconsidered and illogical conclusion when we remember that a National Board of Health has recently been formed from a profession of as equally bad or worse composition. It is no more to be assumed that all elements are to be represented in the one instance than in the other. That our present National Board of Health meets with any serious opposition from the irregular members of the profession, or that its labors

are rendered inefficient from "endless quarreling," does not appear from the facts within the public reach.

The thought that "the disease which more especially calls for such an organization is pleuro-pneumonia," must have originated in a mind ignorant of the facts in the case, for it is no more the desire of the veterinary profession to have a National Veterinary Sanitary Bureau established to deal with pleuro-pneumonia alone, than was it the purpose of the National Board of Health to limit its labors to a consideration of the number of victims claimed by yellow fever. Not that contagious pleuro-pneumonia of cattle does not offer a matter worthy the serious attention of such a bureau, for pecuniarily it does, but because it is one of those diseases fraught with but little danger to human health as compared with many others which afflict the lower animals. Perhaps the *Record* does not know that Gerlach, the veterinarian, first instituted the investigations which determined the transmissibility of tuberculosis through the use of milk drawn from infected animals! Can he deny that this disease may also be communicated to man through the medium of the expired air? Does the medical profession know how dangerously prevalent this disease already is, and with what rapid progress it is spreading? Can they determine its presence in the domestic animals except upon post mortem examination? Are the dangers from this disease of so little importance that it can be placed upon a par with syphilis? Is it not time this boasted medical profession had turned their attention to the *prevention* of disease rather than spend their lives as simple *curers*? And if they should determine to make an advance in this regard, they will find no richer field in which to labor than that which includes the animal diseases and their consequent source of disease to man. Tuberculosis is but *one* of these, though probably the most dangerous of all, for the reason that the medical profession as a body does not know of its infectious qualities, and no precautions are taken to prevent the everyday use of milk from animals so affected, or the use of their carcasses for food.

These presumed guardians of human health are equally ignorant of the common prevalence, in some parts of the country, of

cattle anthrax, and most of them unaware of the fact that the veterinarian Fezer, of Munich, has found the *Bacillus Anthracis* in the milk of animals suffering from this malady, and proven its power of communicating the disease to other animals when gaining direct access to the blood, as it may through abrasions or wounds, when taken as food. Has humanity any protection against this terribly fatal disorder except that furnished by the veterinarian's skill? The same question may be asked, and the same negative answer in every instance must be given, regarding glanders and farcy of the equine species; hydrophobia and the parasitic diseases of the canines; measles, trichinosis and "hog cholera" of swine; and "Texas fever," rinderpest, eczema, epizootic and other diseases of ruminants.

New York City, which has probably adopted more measures for the efficient protection of her citizens than any other community in this country, is yet open to infection from many sources that are entirely overlooked, or that are at least as yet unguarded against. While she with great pains and entire justice arrests and fines dealers in watered milk, she takes no precautions against the introduction and consumption of milk that may contain animal viruses that are most disastrous to human health.

In fact, all the diseases to which the lower animals are subject affect more or less directly or indirectly, the health, life, pecuniary interests or happiness of man, and it remains alone for those who are veterinarians to sooner or later afford that protection which a scientific knowledge of these matters shall indicate.

Let veterinary science receive from the hands of all intelligent men, and especially from the medical profession, that kindly recognition and support which justice demands, and let the derision which has characterized too many of the references made to us in medical journals be replaced by sentiments that accord strictly with facts, and that are unbiased with envy, conceit or bigotry.

Yours truly,

A VETERINARIAN,

ITALIAN VETERINARY CONGRESS.

As announced by circulars and notices, the Italian Veterinary Congress assembled in the city of Bologna on the 7th of September and continued in session until the 10th—four days.

It proved a perfect success. A large number of the members of the profession gathered in the large amphitheatre reserved for that purpose, and nearly three hundred veterinarians were collected together from the different parts of Italy, besides numerous specially appointed officers, representing different branches of the Government.

Under the presidency of Prof. Lanzillotti Buonsanti, the affair passed off in the most satisfactory manner, and concluded with a magnificent supper, at which nearly one hundred members sat together and congratulated each other upon the success of their work.

The officers of the Congress were: President—Prof. Lanzillotti Buonsanti, of the Milan Veterinary School; Vice President—Prof. Generali, Director of the Modena Veterinary School; Secretary—Prof. Tampellini, of the Modena School; Vice Secretary—Dr. Azzali.

During the two sessions of each of the four days of the Congress, and according to previous arrangements, numerous questions of importance relating to Veterinary Education, Veterinary Practice, Sanitary Medicine and Jurisprudence, were discussed. Amongst them we noticed the following, which, like many others, were passed unanimously: Upon the admission of students in the veterinary schools; Upon the necessity of preventing, in the interest of the public, the practice of veterinary medicine by unqualified persons; Upon the best manner of rendering the education in veterinary schools more practical; Upon the necessity of special instruction for the inspectors of meat in slaughter houses, and a relative microscopic examination; Upon the organization of a veterinary inspection of slaughter houses in large cities, and upon the best mode of organizing the inspection of markets

and meat in all towns; Upon the general administration of the veterinary schools; Upon the frame of proposed laws regulating the trade in animals and laws of warranty, common throughout Italy; Upon the formation of a protective and mutual Society; Upon the organization of a sanitary veterinary service over the entire country.

The entire transactions of the meeting, with papers and discussions, are to be published in book form, the Ministers of Instruction and of the Interior having granted a special sum of 300 francs towards defraying the expenses of printing.

INAUGURATION OF THE STATUE TO BOURGELAT.

On the 30th of October the inauguration of the monument to Claude Bourgelat was celebrated in the school of Alfort.

A large number of people assisted at the ceremony, amongst which, besides many veterinarians, for whom it was a grand holiday of professional pride, were seen many physicians, scientific men, political and literary notabilities.

The Institute, the Academy of Medicine, the Central Society of Agriculture, several scientific societies of Paris and veterinary associations of France had sent delegates for the occasion.

Mr. Chauveau, director of the Lyons school, represented that great institution.

Toulouse school had sent a congratulatory address signed by the members of the faculty.

Foreign veterinary colleges were also represented. Those of Berne, in Switzerland; of Bruxelles, in Belgium; of Munich, in Germany, each had one of their professors as delegate.

Three speeches were delivered: by Mr. Bouley, who represented the Minister of Agriculture, by Mr. Baron, professor of zootechny at Alfort, and by Mr. Thierry in the name of the veterinary profession. The ceremony closed with the delivery of a poem from the pen of a young veterinarian, Mr. Ernest Pion.

OBITUARY.

C. H. STOCKER, D.V.S. of Salem, Mass, died in the night of Thursday, 20th of November, from the effects of prussic acid which he took a few hours before. His diploma dated from 1876.

SPECIMENS SENT TO THE MUSEUM OF THE AMERICAN VETERINARY COLLEGE.

- 164, 165. Skulls.....A. Liautard, M.D., V.S.
 166. Pleuro-Pneumonia.....L. I. Bell, D.V.S.
 167. Tuberculous and Pleuro-Pneumonic
 Lungs of a Cow.....L. I. Bell, D.V.S.
 168. Necrosi of Os Pedis, Navicular Bone
 and Os Coronæ from Punctured
 Wound of Foot.....C. Stocker, D.V.S.
 169. Calcified Vertebrae of Alligator.....R. McLean, D.V.S.
 170. Portion of Left Branch of Inferior
 Maxillary of an Hippopotamus....R. McLean, D.V.S.
 171. Foot of a Mule, amputated with shoe
 attached (case recorded in Octo.
 No. of Am. Vet. Review).....W. E. B. Miller, D.V.S.
 172. Fracture of Ossa Innominata at the
 Cotyloid Cavity, with Fracture of
 the Head of the Femur displaced
 on the Posterior Face of the Fe-
 mur.....E. F. Thayer, V.S.
 173. Strongyli of Bronchia of Calf.....F. S. Billings, V.M.

EXCHANGES, ETC., RECEIVED.

Turf, Field and Farm, Hospital Gazette, Medical Record, Prairie Farmer, Live Stock Journal, Ohio and Practical Farmer, Scientific American, Bulletin National Board of Health, Medical and Surgical Reporter, Archiv. fur Wissenschaftliche und Practische Theirhielkunde, Monatschrift des Vereines der Thierazte in Oesterreuh, Revue Internationale de Medecine Dosimetrique Veterinaire, Clinica Veterinaria (Milan), Recueil de Medecine Veterinaire (Paris), Annales de Medecine Veterinaire (Bruxelles), Archives Veterinaires (Alfort), Veterinary Journal, Veterinarian (London), Journal de Zootechnie (Lyons), Gazette Medicale (Paris).

BOOKS.—Strangway's Veterinary Anatomy, revised by L. Vaughan; Bulletin de la Société Centrale de Medecine Veterinaire; Farmer's Veterinary Adviser, by Prof. J. Law, 2d Edition; The Lung Plague of Cattle, by Prof. J. Law.

CORRESPONDENCE.—A Veterinarian, M. R. Trumbower, W. J. Coates, F. S. Billings.

AMERICAN VETERINARY REVIEW,

JANUARY, 1880.

ORIGINAL ARTICLES.

POST-MUSCULAR TRACHEAL ABSCESS. UNSUCCESSFUL TRACHEOTOMY. DEATH.

BY W. J. COATES, D.V.S.

On the 31st of May, 1879, a grey mare belonging to a coal merchant of this city was brought to the Hospital of the American Veterinary College, suffering with acute laryngitis of three days standing. When admitted, the respiration was exceedingly difficult and so labored, that, fearing suffocation and while the animal was threatening to fall, the operation of tracheotomy was performed by a longitudinal division of three of the rings of the trachea. The mare recovered, resumed her work about two weeks afterwards, and kept it up until the middle of November, when she was brought back to the college.

She had refused her food the evening before, but having eaten her breakfast that morning, she was put to work. She had gone but a short distance when she was taken with difficulty of respiration and was at once sent up for treatment.

On admission, she was covered with cold perspiration, her visible mucous membranes were bluish, her pulse could not be

felt, her nostrils were widely distended and bleeding quite profusely, the countenance haggard and manifesting probable dissolution unless quick relief should be given.

Preparations were actively pushed for the operation of tracheotomy, but before everything was ready the mare staggered, fell down and stopped breathing.

With rapidity, as was required by the state of the patient, a longitudinal incision was made through the trachea, but it was found that a large tube could not be introduced. It was only with difficulty that the longest and narrowest tube was placed, and artificial respiration begun by pressure of the ribs. For over fifteen minutes the work of respiration was carried on, and was at last rewarded by a sigh taking place at long intervals; these increased in rapidity, and finally an attempt by the mare to raise her head, neck and front legs was made.

Allowing her a little rest to recover from the severe trial she had just passed through, and the respiration remaining yet very difficult and labored, it was found necessary to change the tube. The one she had in was narrow and evidently insufficient to allow a free introduction of air. Tubes of different sizes and of different construction were brought into use, but none were found which could give relief. Some of them seemed in fact perfectly useless, as neither entrance or exit of air could be felt while they were in place.

The finger being introduced into the trachea, the calibre of this canal was found much reduced in size, in fact, so much so that it would scarcely allow the introduction of the little finger. The mucous membrane was swollen and it was feared that this condition of the organ extended all the way down. Above the incision, the trachea was of dark color, somewhat swollen also, although nothing like it was below.

The tube which seemed to give the most relief was then reintroduced and the animal made as comfortable as possible. She died a few hours afterwards.

The post mortem revealed a stricture of the trachea at the part where the original operation was performed, with deformation and extensive calcification, the diameter of the organ being

then scarcely one and a half inches. Below the point where the second operation was performed existed an abscess, posterior to the muscular coat of the trachea, between it and the cartilaginous rings, pushing the mucous membrane towards the center of the calibre of the organ. It contained about four ounces of bloody suppuration, and filled about five inches of the trachea from the point where it was felt down towards the chest.

The interesting points presented by this rather unusual case, beyond the presence of the abscess, are the lesions of the trachea, which resulted from the first operation, performed in May, and which are evident proofs of the impropriety of performing tracheotomy, except *secundum artem*, by amputation of the half of two rings.

The operation is very simple, unless danger of suffocation is evident; and from the result obtained in this case, it may become a matter of serious consideration whether it would not be better to have the patient well secured, even overlooking temporarily the danger of suffocation, to perform the operation as it ought to be and according to established rules; and if breathing should stop, to have resource to artificial respiration, as it has proved successful in this case. Recovery could not be then threatened by complications similar to those above recorded.

FRAGILITAS OSSIUM.

COMMUNITIVE FRACTURE OF THE PELVIS AND FEMUR.

BY W. J. COATES, D.V.S.

A bay mare, ten years old, the property of a grocer of New York City, was brought to the College for treatment. Some two weeks before she had made a slip backwards on the greasy pavement of one of the avenues and had been lame since. She had had a few days of rest, some liniment applied on the fetlock and at intervals light work. Seeing no im-

provement, however, the owner decided to place her under our care.

On admission to the hospital she was found lame on the off hind leg. This was carried in abduction, with a limited flexion at the hip joint. She walked carefully on it, but trotting was, of course, impossible. The ischial region, posterior to the joint, was slightly deformed by swelling, while the measurements between the sacral spine and the external angle of the ilium on the right side was somewhat shorter than that of the left. On rectal examination, a large thickening was detected on the floor of the pelvis to the right side of the median line. In moving the whole extremity, a sensation of crepitation was plainly felt.

Diagnosis: Fracture of the floor of the pelvis posterior to the acetabulum, with incomplete repair.

Prognosis: Unfavorable, on account of the age of the animal and of the length of time since the accident took place.

Treatment was not advised, but the owner requested it, even in presence of the prognosis.

The mare was then placed in slings and immobilized, as much as possible. Some four weeks later she was taken from the slings; she walked quite firmly and was anxious to trot. She was then placed in a large box stall to allow her to move about. After a short time she lay down and finding it difficult to get up alone, she was raised. At first she was quite sore and a little lame. She was then secured in the slings again, and left there for a week longer, when, having become restless and full of energy, she was once more let loose.

Some hours after she lay down, and after a short time, tried in vain to get up alone. She was then raised again, and when standing, a fracture of the left femur on the left side was detected. The mare was immediately destroyed.

At the post mortem a comminutive fracture of the femur was exposed, the bone being crushed in the middle of the body in three longitudinal pieces and several smaller ones. The bone was considerably thinner than usual, the compact layer being scarcely more than a line in thickness.

The fracture of the pelvis was repaired. A large callus covered the ischial portion of the floor of the pelvis and the

obturator foramen was so completely closed by the bony deposit that it did not allow the introduction of two fingers; the muscles were pale and atrophied, and the obturator nerve was surrounded by a thick mass of infiltrated plastic material.

EDITORIAL.

PLEURO-PNEUMONIA.

The veterinary profession probably, no less than the agriculturists of America, have been anxiously watching the different reports which at times have appeared concerning this disease, the extent of its existence amongst the cattle of the various States infected, and the results obtained from the measures taken to prevent its spread or to complete its eradication. New York, New Jersey and Pennsylvania have for nearly a year been engaged in carrying out the work by their different Cattle Commissions, and it is to be hoped that the good already done will not be stopped through neglect or oversight on the part of the representatives of the people in the respective Legislatures of those States.

Just how much has been accomplished by these Commissions is not to be determined from the meagre, and usually unofficial, reports which we have occasionally been able to procure. Neither does there seem to be any disposition upon the part of the veterinarians engaged on the various staffs to enlighten the profession either as to the measures enforced or the success which has attended these protracted efforts.

In New York we know from personal observation that much has already been effected, although we are far from being rid of the disease, for but a few days ago an outbreak occurred at Yonkers, a suburb of this city, and Long Island is almost as prolific in its production as she ever has been in the past, while even New York city, we understand, still harbors some infected stables.

The lack of funds to prosecute the work here is, of course, in no wise the fault of the Commission, and it is unfortunate that

their labor should be impeded from this cause when success seemed possible. Restricting the expenditure of money, in this case, to thirty-five thousand dollars, when the disease was known to be so generally prevalent and difficult to deal with, was a grave shortsightedness on the part of our last Legislature, which will postpone the final day of eradication if it does not affect us even more seriously. New Jersey, with her claims to having instituted effective quarantine, has, in spite of these and her defective stamping out process, a full share of diseased animals. The want of money cannot be pleaded there as the cause of any failure which may eventually determine itself. Pennsylvania, judging from an article reproduced in this issue, is also earnestly prosecuting her labors with confidence of future success.

To a sanguine mind that which has been already accomplished might seem indicative of an early relief from further danger, but the critical observer will not forget that inefficient measures and their lax application must indefinitely prolong the presence of the disease in different parts of the country, and then serve to maintain a general danger of infection to the whole country. For years past we have been told by Dr. Thayer, of Massachusetts, that all the Eastern States, with the exception of Connecticut, were entirely clear of this disease, yet on Saturday, the 20th ult., the *New York Times* contained an account of an outbreak in New Hampshire. We are somewhat doubtful as to the reliability of the report, but if it is true, the probabilities are that Massachusetts, surrounded as she is by three infected States, is or may become easily infected, and the stamping out process, effectually adopted some fifteen years ago, may need enforcement again. The simple fact of the matter is, no one knows to what extent the disease is prevalent in our Eastern and Middle States, and the sooner the National Government and the State Legislatures take measures for determining this point, the better will it be for the safety of our live stock interests both at home and abroad. Some of the effects of tampering with such matters is seen in the "penny wise and pound foolish" economy of New York State in appropriating but thirty-five thousand dollars with which to defray the expenses of the Cattle Commission for one year. At

the most important point in the prosecution of their work they come almost to a standstill for want of funds, and not only is there a loss of valuable time, but much that has been gained cannot be kept, simply from a lack of sufficient force to maintain the position.

The duty of the different States in this matter is so plain that no mistake can be made unless it be intentional. Able veterinarians should have charge of the measures that are to be enforced, and they must not be rendered inefficient by presumptuous officials who know nothing whatever of diseases or the means by which they are to be controlled ; while sufficient funds are to be supplied by the people's representatives. Congress cannot be ignorant of the importance which the question presents for their consideration, and the people expect and are entitled to some action from this body which shall look to the protection of their endangered interests. The recent petition of the United States Veterinary Medical Association, we believe, indicates the direction which their efforts should take, and the establishing of a National Veterinary Sanitary Bureau of the ablest veterinarians to be found, is a matter that should not be delayed. Until some such measures are taken by the General Government or by *every* State, the independent action of one State alone can result in but little good, and the time must soon come when contagious pleuropneumonia will be as common and insusceptible of eradication as it is in some European countries.

DIPHTHERIA IN PIGS.

Prof. Axe of the London Veterinary College, in the December number of the *Veterinarian*, reports an outbreak of diphtheria in a herd of pigs during the month of September, from which one died, while another was killed for purpose of examination. Regarding the cause of the disease in this instance, none could be determined by the investigations instituted by Prof. Axe.

No fresh stock had been introduced, nor had the pigs come in contact with others, so that infection from immediate contact was not admissible, and the question as to whether the disease

can originate spontaneously, while most interesting—as the above writer suggests—is not as yet determined. The symptoms of the disease are said to have been most characteristic. “The illness was invariably ushered in by shivering. This was quickly followed by swelling of the throat. At first the enlargement was soft and pitted on pressure, but soon became hard and resisting. The breathing was quick at first, and afterwards became embarrassed and was performed with difficulty. Each act of respiration was accompanied with a wheezing sound, and the voice was thick and harsh. In this condition the mouth was opened and the tongue protruded. The gait was stiff and unsteady, and in the more advanced state of the malady dulness and stupor were more or less intense. The eyes and nostrils discharged a mucous or muco-purulent fluid, and the general indications of fever were strongly marked. The lesions observed at post mortem were essentially those of diphtheria, and consisted more especially of infiltration and swelling of the tissues of the neck, tumefaction of the tonsils, and the presence of a dirty-grey granular-looking false membrane on the internal surface of the throat.”

It would have been interesting to know whether the exudation was in patches, involving not only the epithelium but also the submucous tissue, and whether or not there was deep sloughing with proportionate loss of tissue and consequent ulceration. A microscopical examination of the exudate and blood for bacteria, might not have been barren of instructive results. The treatment adopted by Prof. Axe was “the administration of saline aperients followed by antiseptic agents. A complete change of food was also ordered to be made, and the whole of the sties and fixings to be thoroughly cleansed and disinfected. After my visit, the animals all quickly recovered and no further extension of the malady has since occurred.”

PUNCTURING IN FLATULENCE OF THE INTESTINES.

In the last number of the *Veterinary Journal* appeared a very interesting article from Prof. Walley of Edinburgh on “Special Forms of Torsion and Displacement of the Colon in

the Horse, particularly in reference to the cause of death ; and the use of the trocar and canula in tympany." He describes three forms of torsion of the double colon which he attributes to three causes : "(1.) By rolling about in the agonies of colic or when turned out to grass, by pitching forward on the nose in attempts to lift a load, or from losing the feet in slippery weather, or by falling over an embankment ; (2.) by the powerful contraction of the muscular walls in spasms of the intestines ; (3.) by the action of gas (tympany) in the interior of the gut when it is comparatively empty."

The subject of intestinal diseases is one of unusual interest, and Prof. Walley renders the profession an important service in elucidating some of the causes and describing symptoms which accompany the above disease. The author of the article claims further that he is enabled, from the observations which he has made, to unerringly diagnosticate this condition and consequently to prognosticate with equal accuracy. Regarding the use of trocar and canula in tympanitis, we agree with Prof. Walley that in some instances it offers immediate and permanent relief, while in others it fails entirely. We have seen many of the cases of fermentation which he describes where "the ingesta, fluids and gas form a seething mass." It is particularly apt to occur in some districts as a result of feeding Indian corn, when warm weather first makes its appearance in the spring-time.

In these cases little or no gas is liberated from puncturing, and internal medication must be relied upon for success in treating. Contrary to Prof. Walley's experience, we have seen ill results follow the use of the trocar. We have seen one case in which acute peritonitis caused death, and a post mortem revealed no cause of the disease other than the traumatism. In another instance, we were so unfortunate as to puncture one of the colic arteries, and fatal hemorrhage ensued. Yet, notwithstanding these accidents, we are strongly in favor of the employment of this method of treating tympany, for without it the percentage of deaths would be much greater than now.

RABIES.

The frequent outbreak of this disease in England has been, and is yet, according to reliable testimony, a prolific source of loss to the owners of valuable dogs, and occasionally also of human life. From recent Glasgow and Dublin papers, it would seem that Scotland and Ireland are scarcely more fortunately situated than England, for both human and animal lives have within a few days fallen victims to this dread disease,

That no efforts have been taken by the Government to get rid of such a terrible scourge, does not, perhaps, seem so strange to Americans, who are accustomed to see Government ignore all matters pertaining to veterinary medicine, as it must to veterinarians of continental countries. If the disease was not so extremely fatal, particularly in man, or if there was any known remedy which occasionally would prove efficient as a cure, there might be a seeming excuse for such inaction: but with death resulting in man in every instance and in nearly if not *all* cases in other animals, longer delay in the adoption of suppressive measures must be at the expense of the best interests of the country. The accomplished editor of the *Veterinary Journal* has for months past been urging the Government to take action in the matter, but how long it will be before his recommendations are adopted is a matter of mere speculation.

Fortunately for the United States, rabies is but rarely seen to any considerable extent in this country, never appearing, so far as we are aware, in an enzootic form as it does in England. We have not met a single case in New York for about three years, and we believe but very few cases have occurred here during that time. No doubt one of the principal reasons for our comparative freedom from this malady is the different manner in which our dogs are generally kept, but few packs being found in this country. That we are open to infection from this source, becomes fully apparent when we consider the large number of dogs imported from England yearly; yet, serious as the danger may be, it must ever be much less than where the disease is unknowingly introduced into large packs, as has happened often

in Great Britain. The loss in human life cannot of course be estimated, and it is a matter for regret that so dangerous a disease, capable of suppression, should, contrary to the advice of the ablest veterinarians, be allowed to commit its ravages unchecked.

NOTICE TO ARMY VETERINARIANS.

At the last meeting of the Faculty of the American Veterinary College the following resolution was unanimously adopted :

“ On the motion of Dr. Liautard, it was resolved that the gentleman now practising in the army in the capacity of veterinary surgeons have the privilege of attending the courses of lectures of the College on the payment of half fees.”

We hope that the resolution will prove of interest to the practitioners in the army who are desirous of completing their studies, but may have been prevented from doing so through want of the necessary means to attend college.

PROFESSIONAL HONORS.

John F. Winchester, B.S., D.V.S., a graduate of the American Veterinary College, class of '78, has been appointed Lecturer upon Veterinary Science in the Massachusetts Agricultural College at Amherst. Having graduated from the scientific department of Amherst College in the class of '75, it is highly complimentary to his professional endeavors that he so soon returns to his alma mater honored with the position of a teacher. We feel confident the opportunities of which he has taken advantage in the past render him competent to give instruction in the course as arranged at Amherst, and we tender him our best wishes for success.

REVIEWS.

THE FARMERS' VETERINARY ADVISER; THIRD EDITION. THE LUNG
PLAGUE OF CATTLE, CONTAGIOUS PLEURO-PNEUMONIA.

BY JAMES LAW, F.R.C.V.S., CORNELL UNIVERSITY, N. Y.

The reaching of a third edition of Prof. Law's work at so early a period attests the reception it has met from those for whom it was especially intended. What value it has as a text-book is already so well understood by the profession that comments at this time would seem out of place.

The monograph upon the "Lung Plague," which is bound also with the "Adviser" and constitutes the principal alteration from the previous editions, is published in pamphlet form of 100 pages and contains the author's opinions of the disease as deduced from his recent experience while acting as one of the staff of Cattle Commissioners of the State of New York. The measures adopted by the State for stamping-out the plague have presumably been the same as those recommended in this pamphlet, and will prove of interest to the citizens of New York as well as to the profession generally.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME; OR, HORSE VARIOLA.

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

BY M. L. TRASBOT.*

(Continued from page 370.)

Upon two fillies, abandoned in the hospital of Alfort in 1873, aged six weeks and three months, I practised, before they reached their second year, inoculation with the vaccine taken from a

*Translated by A. Liautard, M.D., V.S.

child. Each had a magnificent generalized eruption. Since that time I have vaccinated them three times without result. They were sold before I could make another attempt.

Upon horses brought to our hospitals for various diseases, I have, almost every year, practised numerous inoculations, from horse to horse and from cow to horse, and I have always met with refractory subjects.

It is certain, then, that while experimenting upon horses of all ages, one will meet with a number and variety of negative facts, no matter by what process the experiments may be conducted. For this reason, I believe other proofs necessary, before accepting as definitive the conclusion of M. Chauveau, viz., that animals, in which the injection of vaccine under the skin or into blood vessels has remained negative, possess, nevertheless, the aptitude to contract the disease, but were protected, however, by this experiment which gave no apparent result.

However, it is now established that the *horse-pox* may be inoculated in horses up to that time virgin of it, by all the processes which have for their first effect to introduce the virus intact into the economy. Besides, from what precedes, it results that the surest process of transmission, as well as the simplest and the easiest, is the sub-epidermic insertion with the lancet. And last, it is also proved, by other experiments of M. Chauveau, that in other species, and the domestic hybrids of the genus *equus*, the facts are the same as in horses.

The mode, so ingenious, of inoculation with the liquid obtained from the surface of the cutaneous pustules of the horse, is not the only one by which one may propagate the disease; there are others, not published as yet, but which by their interest as affecting the history of horse-pox, I may be allowed to mention here.

In a paper addressed to the Central Society of Veterinary Medicine, M. Charles Martin reports that he has succeeded in inoculating gourme by taking the liquid from the nostrils and from the pus of an abscess, introduced under the epidermis of healthy horses. He obtained two negative and twelve positive results out of fourteen experiments.

But a single fact would be sufficient, especially if absolutely

positive, as the one he reported which was characterized by an eruption upon the right cheek, with angioleucitis and sub-glossal abscess, though the inoculations were made on the pituitary mucous membrane.

It is doubtful if M. Charles Martin appreciates all the facts of this experiment; he did not have the idea of assimilating the eruption on the cheek of his subject with *horse-pox*; our readers themselves might think that the experiment does not prove the identity of *gourme* and vaccine: therefore I only present it at this time as a presumptive proof, reserving to myself the opportunity to give, further on, an irrefragable proof of the truth.

As to the two negative results, they may be due to the fact that the pus used in the inoculation was obtained from animals which had passed beyond the period of virulency—a point to be looked into by other experiments.

M. Martin has also succeeded in transmitting horse-variola by a plug of oakum impregnated with muco-pus, carefully rubbed over the nasal membrane.

These results I will discuss in another paper.

And now, to terminate this subject of inoculation of *gourme*, I may briefly mention one of the numerous experiments I made some time ago, to prove that this disease is essentially *horse-pox*, and that it furnishes the vaccine matter.

Last year, a five-year old horse, bought within four or five days, was placed under treatment, presenting the general symptoms of a slight fever, and the special signs of angina; dullness, anorexia, serous and almost transparent discharge from both nostrils, especially the left. In examining attentively, as I always do now, all the surface of the skin, I found under the superior lip first, and then on the ribs and the croup, several small pustules, well marked, which satisfied me that I had to deal with horse-variola, and not with a single inflammatory angina.

I inoculated a cow with the serosity from the nostrils of that horse, with eight punctures on the perineum, and five days later I had eight beautiful pustules. Two days later a midwife of Alfort vaccinated several children with the liquid of one of those pustules, and every child had a superb vaccination, which also

was passed to other children. I had at the same time vaccinated another cow and several pigs with equal success.

I may here say that this last animal is a good subject for the cultivation of vaccine—a long series of experiments authorizes me to make this statement.

But to return to the horse, the subject of these remarks: For several days he ran abundantly at the nose, had a large lymphangitis on the left side of the upper lip, with pseudo-ulceration, three abscesses in the sub-glossal ganglions; in fact, all the symptoms of gourme in its most common form.

What ailed him when I took from his nostrils the vaccinating liquid? Probably, perhaps surely, pustules developing in the nasal cavities, or perhaps in the pharynx or larynx.

This, it seems to me, needs no comment. It is sufficient by itself to prove that gourme is truly the vaccinageneous affection, and that in its essence it is truly *horse-pox*.

Other important questions remain to be considered in relation to the inoculability of gourme. These are: to know how long the liquid exudated on the surface of the respiratory mucous membrane remains virulent; if it is so after it has become purulent; and if the pus of the lymphangitis and of the ganglionic abscesses remains such for a variable length of time. The solution of all these problems I am not yet prepared to announce.

M. Martin, it is true, has transmitted gourme or something like it, to young horses, with the pus of diseased animals; but I do not consider his facts as essentially demonstrative: for it is proved to-day, that inflammatory products are phlogogenous. Placed in contact with healthy tissues, they produce in them inflammatory processes. Here is then, a cause of error when one operates on the horse. In inoculating him, or placing on a portion of his mucous membrane pus from another horse, one cannot be assured that the result will not exceed a simple inflammation.

Specific pustular eruptions alone may furnish a sure proof of the virulency of the liquid employed. To obtain this without fear of confusion, the best ground is the cow virgin of vaccine. It is by a series of experiments executed in this manner, that the

durability of the virulency of gourme can be established. I would advise my colleagues in favorable positions for conducting such experiments, not to neglect their opportunities. These experiments are simple, somewhat tedious perhaps, but of great interest in their relation to comparative pathology, and perfectly harmless to the animals subjected to them.

Again, it remains to be determined whether the dry pus will, like the dry vaccine, as proved by M. Chauveau, transmit the disease. If it were so, there would be a new series of circumstances, under the influence of which an accidental contamination might take place, and which would probably quite overthrow the theory of primitive development.

IV

Let us now consider how the accidental propagation of the disease takes place.

This second part of the question, based only upon observed facts, is no doubt less precise than the other, since all the material, obtained by direct experiment, is simple, very significant, and easily to be reproduced indefinitely. It deserves, however, to be treated somewhat exclusively, as by collecting all observed facts occurring from time to time under their notice, some general data, somewhat exact, can be gathered which may be of some use in the establishment of prophylactic measures.

Considering the facts obtained by clinical observations and by experiments whose results we noticed in the preceding paragraph, we may, in principle, say that the equine virus, placed either in the liquid or powdered form, in contact with an absorbing surface, which could not chemically alter it, will give rise to the disease whenever the organism in which it is so introduced shall be in a condition favorable to its reception. I have no doubt on this point. Whenever the introduction of the intact virus occurs simultaneously with the existence of this aptitude, the disease will develop itself.

The circumstances in which these two necessary and efficient conditions of the transmission of gourme may be realized, are separated into two distinct groups, the first including all those in

which the virulent element is the product of the disease existing in the animal ; the second, those in which the virus is exhaled in the form of vapor or impalpable powder, diffused in the air surrounding the affected subject. In other words, there is contagion both by fixed and volatile virus.

In relation to the first, it certainly is demonstrated in an absolute manner by the experiments just related. In all cases, indeed, it consists in a true inoculation, except that instead of being done by design and experimentally, it has been the effect of accident, in a manner occult and often impossible to explain.

The mechanism by which the inoculation may take place, will vary indefinitely and it would be superfluous to examine it all. One of the most ordinary is certainly the immediate contact of diseased with healthy animals, placed in the same stable, eating the same food from the common rack, and in the same feed-box. It is effectively comprehensible that in the condition of both animals, everything is favorably disposed for an inoculation to take place, either because they will rub against each other, or because the sick will drop upon whatsoever they touch, serosity from the pustules, or saliva containing it, or virulent nasal discharge, etc., which may come in contact with the lips and nostrils of the healthy. It is extremely probable, not to say certain, that this is the most common method of the propagation of the disease, and that the so frequent prevalence of the gourmy eruption, almost always confluent, around and inside the nostrils and mouth of horses, may be mostly due to a special condition of the skin of that region.

To prove this, experimental results, more or less significant, might be considered. When a virgin subject has been inoculated, the pustules are always seen more abundant around the points of inoculation, no matter in what region the operation has been performed. I lately collected several similar observations, which with M. Nocard, we followed with much interest. A ten-year old horse was placed under my care for cartilaginous quittor of the right hind foot ; he had been placed in a stall alongside of a gourmy patient, which I had examined, and upon which I had just opened an abscess. An instant before, I had performed up-

on him, (the first horse) the operation required by the disease. This operation was performed in the usual way and from the condition in which the tissues left intact were, ought to have terminated satisfactorily.

Five days latter, I was informed that he was very ill. He had eaten nothing since the day before, had an intense fever, a high temperature of 40° C.; his diseased leg did not rest on the ground, was swollen as far as the hock and covered above the dressing by an abundant serosity. Fearing these might be some complications of beginning gangrene towards the articular ligaments, the animal was cast to see what could be done. My surprise was great, upon the dressing being removed, to find that the whole extent of the wound was granulating and healthy. I thought of a possible traumatic erysipelas. A dressing of tincture of aloes was applied, and the patient watched.

Two days later all was explained. The appetite had returned, the animal was lively, and its temperature down to 39° C.; the operated leg, though swollen yet, was resting on the ground, and was covered from the middle of the cannon down to the hoof with a confluent eruption of variola, perfectly manifest. After four or five days the secretion had become so abundant that almost all the epidermis became loose, and, in running the liquid formed little streams flowing down the surface of the hoof. It was a repetition of the case observed by Prof. Bouley. At the same time appeared other less numerous and regular pustules over different parts of the body, the lips and the nasal membrane.

I had no more doubt as to the nature of the disease. I wanted, however, another experimental proof. I inoculated, with the serosity taken from the fetlock, a young calf with about forty incisions made on the skin of the abdomen, previously shaved, and I obtained a magnificent vaccine.

The horse got well and returned to his work on the twenty-sixth day, being able to perform farm work.

What had taken place?

It is easy to understand. After touching the gourmy horse, I had in operating, inoculated with my fingers my subject affected

with quittor, which, no doubt, never had* had gourme. I say that he never had it, for a second attack in the general cases when it takes place, never reaches such considerable proportions.

I add that the eruption had been confluent precisely round the parts where the insertion of the virus had taken place, and generalized; but limited everywhere else, even upon the lips and nostrils.

By itself this fact is sufficiently demonstrative. But it was followed immediately by three others exactly alike, which combined have great value as experimental demonstrations.

The horse, whose history I have just given, was thrown a second time, when the equine virus was beginning to be exhaled by the wound of the foot and the surrounding skin, on the 17th of April. Upon three other animals, operated on on the 18th and 30th of April and the 6th of May following, also for cartilaginous quittors, the same phenomena were produced.

How did the inoculation in those last three cases take place, they being in different stables? With M. Nocard I thought it was produced through the medium of the hobbles or instruments used during the operation. What is important, however, is the fact that in all there had been inoculation and confluent eruption in the neighborhood of the points where the virulent product had been deposited.

On the occasion of these four observations, which took place almost simultaneously, I remarked to the students how these facts reproduced the sore heels of Jenner—this quittor, the origin of vaccine, so long looked for! how much, also, at another time, similar facts would be incomprehensible! and how, still, things absolutely obscure at one time, become, on the contrary, clear and easily understood when the questions with which they are connected are ultimately cleared off by good observations and carefully executed experiments.

Evidently here there would be no great credit to see right; but only twenty years ago it would have been otherwise. And how many identical facts, though, perhaps, differing in form, must have taken place without being understood! Was not this disease the same that was observed on the genital organs of the

stallion and mares by Lautour and Dayot, and which, under the name of coital exanthema, was described by Hering, Rychner, Straub and Rœrber? The time between the contaminating coition and the appearance of the pustules, their form, their confluence upon the genital organs and their limited generalization upon the body, and the radical cure of the disease in two or three weeks—all these characteristics leave no doubt that it was horsepox overlooked. This was proved by the experiments of M. St. Cyr. It is not uncommon to meet these eruptions very abundant round the anus of the male and the vulva of the mare during the evolution of gourme caught by any other way. If a mare then be covered by a young stallion, virgin of the disease, he will have a good chance of being inoculated at the penis, and thus to propagate the disease on a large scale. If, again, as it is common, some mares are presented to two stallions, there will be such a multiplication of inoculations that soon a large enzootic will appear similar to those which we read of. Coition then may be considered as a cause of propagation by a direct inoculation. Whether this fact is established or not, what is incontestible is, that it is possible, as long as a specific eruption is found upon the lips of the vulva.

It may take place again by other means. Thus, the tools used for cleaning, for instance, must frequently be the means by which the virus is transported from one animal to several others. The currycomb especially may act so, and particularly, it may be said, will this take place so long as the vaccinagenous lymph is active while liquid and fresh. Also, as proved by M. Chauveau, when the lymph is dry and in a pulverized condition.

Many other accidental inoculations similar to this are unnecessary to be mentioned here.

These different examples are sufficient to give a general idea of all the circumstances under whose influence contagion by fixed virus or accidental inoculation may take place.

Contagion by volatile virus is denied by no one. Even without known facts, one will admit it. All known variola among the different zoological species are transmitted without immediate contact; between animals of the same species equine

variola would be the only exception, if it did not act alike. But numerous facts of transmission by simple cohabitation have furnished long ago the positive proof. There is certainly no practitioner who has not observed it. Whether there is diffusion in the atmosphere of the virus in the shape of vapor or only germs in the state of impalpable dust, the propagation has always taken place without possibility of suspecting an accidental inoculation. Still, I must say that many of the facts which have been named as proofs of this belief, are far from having the probative value that their authors have given to them. What I have said before of the various mechanisms by which, perhaps, an accidental inoculation may take place, will allow me to eliminate a few of them. For myself, in looking during several years for an observation of the kind to which I could not make serious objection, I have found but one which seems to have a real value. It is the following:—

It concerns a colt that I had watched from birth. His dam, aged five years, had been bought, without knowing that she was in foal, seven or eight months before he was born. From his birth he was placed beside her in a box stall in a stable where a dozen horses were kept. Five months later a young horse was placed in the stable, precisely alongside the box where the mother and her little one were kept. Six or eight days after this young horse had horse-pox. He had an abundant discharge, a characteristic eruption on the face and different parts of the body. Several days later the colt, which had never been cleaned or brushed with currycombs or brushes, and which had always been isolated, became also affected, though the mother remained healthy. He had even the most complete attack that one could wish to see: laryngo-pharyngeal angina, pustular eruption, lymphangitis on one cheek, sub-glossal abscess—nothing missing. He, however, was cured.

I repeat, this is the only observation which I think I can consider as free from objection. Still, we are not to infer that it constitutes an entire and absolute proof of the transmission by volatile virus. I only, in fact, consider it as merely establishing a strong presumption, and I believe that others like it

are necessary to establish the certainty of the propagation of the disease at a short distance. At what distance and how long is the disease transmissible? These questions remain without solution so far.

To terminate what is to be said relating to the transmissibility of the disease, I may in a few words say something of the other zoological species to which it has been communicated.

It is inoculable to man, and, since Jenner's discovery, it takes with him for some time, as for ever, the place of its variola proper, whether the virus is taken directly from the horse or if it is first given to the cow, where it becomes vaccine.

It is inoculable to the pig, and acts with it as in the two preceding species. This is the result of numerous experiences, of which I shall say more hereafter.

It may even be inoculated to the dog.

Upon other species than the horse pustules appear only at the points of inoculation, though in man a few rare exceptions are reported. Prof. Parrot has exhibited at the Society of Biology a child on whose arm five or six very small secondary pustules were seen immediately alongside the sides of the larger inoculated ones. He thought they might be the result of an auto-inoculation by the running of the vaccinal serosity upon the skin. However, this has no resemblance to the generalized eruption of the horse.

Generally the inoculation succeeds but once upon the same individual, or, at least, the reproduction takes place only after a long time.

I limit these remarks for the time being only.

Personally I vaccinated myself seven or eight times, always with negative results. It is probably so in the majority of cases.

I never had a second attack among the cows that I inoculated one, two or three years before.

(To be continued.)

CORRESPONDENCE.

THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF IOWA AND ITS CRITICS.

That the University of Iowa has the right to establish a veterinary school cannot be questioned. The Constitution concedes all States the right to educate her citizens in any of the sciences in whatever manner they may see fit. Iowa educates her citizens in veterinary medicine, presumably for her own use, and neither the National Government nor any other outside power has the right to dictate in what manner it shall be accomplished. In so long as the State is satisfied with the teaching done, outsiders can have no influence in securing a change. Seeing, then, that the recent undertaking of this University is entirely legitimate and solely under the control of the people of Iowa, the questions which really interest are: Is the teaching being done there of such a character as to guarantee the making of efficient veterinarians? and, if not, How can we induce a change for the better?

It is hardly to be doubted that Iowa could establish a veterinary school the equal of many of the best now in existence—a school which would produce veterinarians the equals of any of the critics that have recently been decrying this new effort. It in no wise appears that such an institution is uncalled for! The Western States are greatly in need of thousands of veterinary surgeons, and the sooner they are supplied, the quality at the same time being superior, the better it will be for the individual States and for the country as a whole. The University of Iowa *might* supply this great want; let us review her facilities! One critic claims that Ames (the seat of the University) does not offer a proper supply of clinical material to insure efficient teaching; an objection that probably amounts to but little, since Mr. Stalker, in his reply to the same critic, asserts that “hundreds of cases are annually presented at the college” for treatment, etc., which cases could undoubtedly be utilized by the teachers and

made to answer all necessary purposes. The claims of another critic, that a national institute of veterinary medicine should alone teach the science and grant veterinary degrees, is probably true when viewed from his standpoint; but since his position is untenable under our present form of government, discussion of the advantages to be derived from such a condition of affairs is useless. If the dreams of this ideal critic, then, are not capable of realization, must no veterinary schools be established until perfection, as he conceives it, is secured in State or individual efforts?

The fallacy of waiting for presumed perfection in *any* institution must be apparent to all who are acquainted with our country's need of veterinary surgeons and the general quality of the material from which the supply must for many years to come be derived. It is not a wide conception of matters that imagines this country most in want of strictly scientific veterinarians, especially if these scientists are to follow unfortunate examples, and expend their time in a fruitless endeavor to work miracles, to belittle honest work done by their equals, and to object to everything that does not comport with their ideas of right and wrong in the matter of teaching. The class of surgeons needed by the United States at this time are men with thoroughly practical educations founded upon a scientific basis that will guarantee continuous and unlimited growth—men who are capable of rendering aid in the *cure* as well as in the *prevention* of disease; for the importance of the former precedes the latter in the estimation of the public and in the immediate welfare of the diseased. It is these men, with their efficient and conscientious work, who will lead us to something higher, by cultivating in the minds of the public a knowledge of the indispensable value of the veterinarian's skill. "Genius does not grow upon every pair of shoulders," says one critic, and a practical application of this law is that all men are not capable of becoming scientists. But does that exclude them from becoming able veterinarians? If so, then America will never be supplied with a sufficient number of veterinary surgeons, for it is not every genius that will enter the profession. Neither can we look for many geniuses to devote

their time and talents to a science that is not appreciated by the public; for few men are inclined to live a life of hardship and self-denial for a glory they shall never know. That a man must necessarily be a genius to successfully teach veterinary science is not a self-evident truth, as appears to be assumed by the critic quoted from above, yet the vital question which presents itself with regard to the new veterinary school of Iowa is as to whether the University has done the best she could, or even so well as she should, in the selection of her teachers, for upon this fact depends the value of the work done and the efficiency of the veterinarians that are to be made. Of that part of the Faculty which is constituted of physicians, nothing is now to be said, for there can be no question as to their ability to teach some of the branches pertaining to veterinary medicine; but of the one "Veterinary Professor" who advertises to make veterinary surgeons in "two years" of about eight months each, the profession has a right to inquire as to his ability and professional standing. Who is Mr. Stalker that he should set himself up as a "Prof." of veterinary medicine in the University of Iowa? We will see! About six weeks after the opening of the session of the American Veterinary College (winter 1875-6), Mr. Stalker, of Iowa, applied for admission and took out tickets for *part of the course only*. During the last two-thirds of a session, then, he attended the lectures given upon certain subjects and ignored the others, thereby depriving himself of any claim to having attended one prescribed course at this college. According to his own admissions in the July number of the *Review* of 1877, he arrived at Toronto the "middle of November," 1876, where he attended the Veterinary College and received its diploma about the first of April, '77. Did he attend but part of the lectures there as he had done in New York the winter before? Does any surgeon who has a respect for the veterinary profession, or for himself, believe that this was an honorable entrance to a respectable profession? And does Toronto continue to make veterinary surgeons in this same disreputable way? Has the State of Iowa and the profession any guarantee that a teacher who does not scruple to gain entrance to the profession in such a manner will be any

more conscientious in the discharge of his duties toward his students? If the University of Iowa countenances such questionable conduct in its professors, will it be any more desirous of securing efficient teaching of its students?

Is it not rather to be expected that the same "railroading" process will be practiced toward the students that was taken advantage of by the only "Veterinary Professor" in the new school? Will such students be of any value to the people who employ them after graduating? trusting to the respectability of the University of Iowa as sufficient guarantee of their attainments.

It would not require a very great reasoning process, under the circumstances and with the above facts, to deduce the logical conclusion that Mr. Stalker's knowledge of veterinary science is as limited as his respect for the profession, which, if true, renders him utterly unfit to fill the position to which he has been assigned. In the name of an honorable profession, of which I am a member, I protest against this making of veterinary surgeons by institutions that employ as teachers men who have in justice no claim to the degree they assume and who have done much to degrade the profession to which they gained admittance in a manner inconsistent with an honorable self-respect. Upon the same grounds I protest against Toronto, or any other recognized school, granting diplomas to men who have in no wise complied with the requirements of their course as set forth in their annual announcements. It is a prostitution of the good name of the profession to graduate men, no matter how intelligent they may be or where they come from, until they have furnished proof of their right to enter the profession; and that institution which is guilty of such practices is unworthy the patronage of honest men.

Let all colleges that attempt to teach veterinary medicine do so with the honest intent to make honorable, conscientious and efficient practitioners, and the primary step in accomplishing this end must rest in the securing of able, honorable teachers. When any institution fails in this essential particular let us, who respect the profession, hold ourselves aloof from all intercourse with them and their contaminating influence, which would soon bring us to a level with themselves.

The profession can and must maintain its dignity and respect, if it would accomplish any good ; and it is not the fault of the rest if a few, who disregard the general interests of all, are treated to the seclusion they have so richly earned.

I am, respectfully,

A VETERINARIAN.

PREPUTIAL CALCULI.

PROF. A. LIAUTARD,

Editor American Veterinary Review.

Dear Sir:—I have this day sent you by express, an accumulation, removed from the sheath of a two-year old steer, which I hope you may find time to analyze, publishing the result in the Review, if of sufficient interest.

I subjoin a brief history of my experience with the disease.—Many cattle are suffering by it in Northern Illinois, and I have failed to find mention of it in any of my veterinary works.

On Sept. 11th, 1878, was called by Abijah Powers, of Prairie Stock Farm, to see some cattle affected with disease of the urinary organs. I was shown seventeen head of one, two and three year old steers, all showing more or less swelling of the sheath, two of them suffering from retention of urine, exhibiting loss of appetite, pulse and respiration hurried, lying down, and disinclined to stand.

An examination revealed the sheath clogged up by a greyish, flakey deposit, which I supposed to be chiefly composed of carbonate of lime and albumen. I removed the accumulation by digging it out with my fingers, afterward injecting carbolic acid one part, to twenty of olive oil. It is needless to say that they speedily recovered from their indisposition. Some of them filled up again afterwards, and the operation had to be repeated.

Since then I have seen perhaps a hundred affected in the same manner, principally occurring through the autumn months.

In yearling steers the accumulations are not so abundant as in older ones, and but few suffer any inconvenience therefrom.—Many drop it in the early part of winter, and then seem free from it until the succeeding fall.

I have seen only steers affected, and under all conditions and circumstances of physical health and various qualities of feed and water.

I have at present three under medical treatment, (from each of which I have removed large masses of the deposit,) to test the value of a preventive medication. One is taking potassa bi tartras; another, tr. ferri chlorid, and the third one hydrocyanic acid. I have just begun, and cannot give the result.

M. R. TRUMBOWER.

Sterling, Ill., Nov. 20, 1879.

A CURIOSITY.

Mr Proffeser Liataend I Was cauled on to See A 4 year Colt Nice Raingey Weight 1130 if in good Condition But Rather thin When I Seen He Was Castrated at 2 yer Old there had 2 other Vetnerys to see the Horse Before I Was Cauld on For my good Luck they Neather one Adminsterd Eny Medisan What Ever So I had Fair Examination of Coarse I Was Boatherd or I Would Not Write this to you I found the Horses Puls 45 and his Breathing Just the Same as his mate By his side in the Stall the horse Had Been Drove on Saterdag & Sondag Monday Morning Eat His Feed Aparently all Right Went to Mowing Horse all Right Monday Night Tuesday Noon Hors Sick trying to Eat Ev-ry Efert useless Chawing hay Not Swaling Eny Chawing Oats Not Swalowing takin in Bran Mashs Not Swaling all this time Water Had Been offerd the Horse in Smaul qantities But the Horse Did not Drink A Drop All thouth he Would Aperiently swalay as the thraught Would mak that Mauvment Neather Did the Watter Rnn out of the Nose as Would in Depherie or Strangels there Was No Sweld Glands No Swelling in the thraught there Was No Sweling About the Gaw and there Was No Colick No Fever the Legs & Ears Was in good Fealing as Eny Hors Would Bee in good health Standing in the Barn Dooing Nothing this Was on Wendness Day the Horse By this time Was very musch Ganted Begin to look very Bad then I Came give Him Some Linseed Oil to Soften up A Clog as I Sposed I had Found

Close to the Enterance of the Stomach Bowels Regular Euran Stage as Eny Horse I Examand all the teath as I Spose I Would Find the Desease Guiding But Found Nothing Rong With his teath Nor his Toung Was all Right the Horse had Never Laid Down But Constantly Seamly to Be Starving to Death For Feed and Water Had No Coughf I Gave Him A Pail of Watter and he tried his Best to Drink But I Dont Beleave He Drink one Drop Buy Working all the Linseed oil Down his throught and What I Poured Down his Noase per Haps 2 tabel spoon Full I think affter We Ketch Wat Was Wasted We got In him 4 Tabel Spoons Full of oil I used Spt of Namonia as A Plaster on the out Side of the throught and in one hour $\frac{1}{2}$ the Horse Was Some Better But I told the Parties the Hors Would Die About Mid-night and I Would Be there in the Morning and We Would open the Hors But in the Night he Seamed So Much Better to the Parties When he Was Dieing I Spose they Give him Croten oil and other Medisan So I did not open the Horse and Would have Nothing to Do With the horse A tall Now the young Colt only 4 year old Had not Bee Rais on oats Nor Corn and of Coars this Was a fine Lucsiry and Had Been very Greedy for his grain there is No Choaking talked of much But in my Practice I have Fonnd it But the Peopel are A litle of the Opinion I dont know What Ales the Horse I Want if you Pleas tell me What Ales the Hors Send me Circulars Evry month and I Will Pay you And I Will visit you Some time I have Had 350 case have lost 14 When one year Had Been Doctord By qacks I have Study the Horse Since I Was 13 years old I am A German We had to Comence yung My Learning is Betier than I can Discribe to you By Pen I am Now 46 years old and I ask for Explanation this Case hear as A Friend in our Profession I Want you to Side With me and Say the Hors Must of Been Chocked and Caused Infermation in the throught But tell me true What you think Aled the Hoars

yours Trueley

the Horse Did not Nead No Phisick for His Bowels Was Regular No Relaxation of the Sistam Had taken Place in that Shape

SOCIETY MEETINGS.

MEETING OF THE MEDICAL ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

No meeting of this Association was held on the 29th of November owing to the absence of most of the students on Thanksgiving. At the meetings held on the 6th, 13th and 20th of December, the President, Prof. Holcombe, presided, and the following papers were presented: Dec. 6th, "The Different Breeds of American Horses, their Uses and liability to Disease," by Geo. H. Bailey of Portland, Maine; Dec. 13th, "Stimulants *versus* Sedatives," by W. Rose, Jr., Stapleton, N. Y.; and on Dec. 20th, "Bronchitis," by M. G. Mattison, Pittstown, N. J.

The paper presented by Mr. Bailey gave an exhaustive account of the breeds and uses of the many classes of horses at present common to our country, while some interesting facts and experiments relating to the heredity of disease and the breeding of animals are given below.

"Among the many causes of disease to which our domesticated animals are liable, I believe the laws of hereditary descent are the most potent of all the influences that determine the destinies of individuals and of nations. The fundamental laws of descent that have been ascertained by science and experience are that every quality of organic existence tends to be hereditary.

'The brave begotten are by the brave and good.
There is in steer's, there is in horse's blood
The virtue of their sires. No timid dove
Springs from the coupled eagle's furious love.'

"That both parents are concerned in imparting characteristics to their offspring, there can be no doubt. This is fully established in the case of the mule, and it is worthy of notice that the mule is stronger lived and lives longer than the horse; a circumstance anticipated by plants, where hybrids frequently live longer than

their parents. The cause is probably the same in both, and is to be found in their infertility, whereby their whole vigor is left at liberty for self-maintenance instead of being expended in two directions. The spermatie fluid of the mule contains no spermatozoa—a fact that has been established in an interesting manner by Wagner in the case of birds, of which many of those that are domesticated readily cross. The influence of the first impregnation also seems to extend to subsequent ones, and is especially marked in the equine genus. This is illustrated by the well-known case of a thorough-bred mare who was stunted several times to a thorough-bred stallion but always proved barren. She was finally stunted to a quagga, the striped South American animal akin to the zebra, procured from a menagerie for the purpose, and proved in foal to him, producing a striped hybrid. Thereafter she was stunted three times in succession to three different stallions of pure blood, and in each instance gave birth to a striped foal. Phenomena of the same description are so common in the case of bitches of any pure breed that have been accidentally covered by a mongrel, that dog fanciers will not attempt to breed from such as have once borne ignoble or hybrid litters. In the human female, cases are of common occurrence in which the offspring of a widow who has married a second time resembles her first husband. The resemblance of countenance, figure, gesture and even mental qualities are family characteristics we daily observe. Acquired qualities are transmitted, whether they belong to sire or dam, and it is well known by experience that the good or bad points of the progenitors of the sire or dam are almost as likely to appear again in the offspring as those of the immediate parents, in whom they lie dormant. Ethan Allen was a strong case in support of this law. His get were almost universally curby or otherwise unsound; and, while he was himself sound, he transmitted to his colts an unsoundness, that, lying dormant in himself, he had inherited from his dam, who was unsound in many respects. Hence, in breeding, the rule is that ‘like produces like or the likeness of some ancestor.’ The mare is commonly supposed to be more highly prized by the Arabs than the stallion, but this idea is said to be unfounded by the celebrated

Abd-el-Kadir. He remarks, 'It is true the foal proceeds from the sire and from the dam, but the experience of ages has proved that the essential parts of the body, such as the bones, the tendons, the nerves and the veins, proceed always from the sire. This is beyond all doubt. The meanest Arab knows now that any malady specially belonging to the bones, under which the sire may be suffering at the time of covering, will be perpetuated in his produce—such as splints, bone and blood spavin, the shape of the bones, and all diseases of the vertebral column. The dam may give to her produce color and a certain amount of resemblance in form, the foal naturally partaking of some of the qualities of the animal which had so long borne it; but it is an incontestable fact that it is the sire who gives strength to the bones, substance to the tendons, vigor to the nerves, rapidity of pace, in short, all the principal qualities.' I have seen within my own experience so many curious and convincing proofs of the transmission of disease, that I have come to believe there is scarcely any constitutional defect or habit that cannot be inherited. Breeding "in and in" has always been forbidden by the divine laws. On the other hand, it prevails extensively in a state of nature with all animals, among whom the strongest male retains his daughters and grand-daughters until deprived of his harem by younger and stronger rivals. It has even become well nigh settled that parents can control the sex of their offspring. Going back to some very low orders, it has long been known that the queen bee lays female eggs first and male eggs afterwards; the same is true of the hen and probably of all fowls. A distinguished French veterinary surgeon, Prof. Thiery of the Academy of Science at Geneva, has shown how the sexes may be produced at pleasure. His plan has been extensively tested in Europe with valuable thorough-breds, and they who have fully experimented claim that its correctness is no longer a matter of doubt. Prof. Thiery says if the female be permitted to receive the embrace of the male during the early part of heat, the product (if both animals are healthy and in proper condition as regards their generative functions and secretions) will be a female; but if the female be covered in the latter part of heat, other things

being the same, the result will be a male offspring. Prof. Thiery found that when the ovum was immature, as in the first of heat, the produce would be a female; but where copulation occurred afterwards it would be a male, because the ovum was more fully ripened or matured. In looking over a recent certified report of the Agricultural Society of Canton de Vaud, Switzerland, we find results of a careful testing of this discovery. In all twenty-nine experiments of the new method were made, and in every one they succeeded in the production of what was wanted, male or female, there not being a single failure. The report further says, 'we have visited a number of stock-farms in France, England and Germany, and experiments have been conducted which prove beyond the shadow of a doubt that there is much that can be depended upon in Prof. Thiery's law.'

"To digress and in conclusion, I believe the true practice of veterinary science is yet in its infancy in this country, and that those of us who have availed ourselves of the many advantages afforded by this Institute have chosen wisely a profession in which the harvest is plenty and the laborers are but few. The best estimate of animal losses from preventible or curable diseases is placed at from two to seven per cent.—from forty to two hundred and forty million dollars a year. The loss in the State of New York alone from epizootic abortion in cows has reached as high as ten millions of dollars a year. The vast monetary interests then that will be intrusted to our care, to say nothing of the sympathy and charity we all entertain for every form of suffering, will more than ever call for veterinarians of the highest education and the best attainments. The amount of knowledge necessary is only to be attained by years of study, experience and close observation. Every step that is made toward acquiring this information will render the practitioner so much the more efficient in the discharge of the duties of his profession, and I have a faith and pride in the intelligence and ability of my associates of the junior as well as the senior class, that I think will bear me out in the assertion that a class of men are entering the profession who will drive out the empirics and pretenders who have so long imposed upon the public because of the lack of better men."

THE MONTREAL VETERINARY ASSOCIATION.

The above Association held its regular fortnightly meeting on Thursday evening, the President, Dr. Osler, in the chair, with a fair attendance of members. Mr. J. B. Green described a very interesting case of necrosis of the upper jaw of a horse, resulting from the fracture of a molar by an ignorant quack, in attempting to knock out the wolf teeth. Mr. Green deserves considerable credit in his treatment of the case, as it was necessary to trephine the superior maxillary at the side of the face in order to remove the diseased bone, an operation not unattended with danger, which, however, he avoided, and now the owner rejoices in the possession of a healthy animal, fully recovered from a disease that had baffled the skill of all the local empirics.

Mr. Wm. McEachran read an exhaustive paper on pulmonary tuberculosis in cattle, going fully into the cause, symptoms and pathology of this now unfortunately too common disease; among the more prominent causes he cited the pernicious custom practised by many breeders, particularly of shorthorns, that of in and in breeding. Another cause was confining cows in poorly ventilated stables and giving them food that would produce a great flow of milk, but at the expense of the animal; anything in fact that tended to lower the vital powers, would, he said, if it did not actually cause the disease, render the animal more susceptible to it, and as it was notoriously hereditary, unless proper care was taken it would soon reach such proportions as to make further trifling with it a serious mistake. One question on which he dwelt at considerable length was, whether the disease was communicable to man by eating the flesh of or drinking the milk from affected animals. The great increase of late both of tuberculosis in cattle and the same affection in man in its most common form of pulmonary phthisis or consumption may and probably do have some connection. That the ingestion of the actual tuberculous matter does produce tuberculosis has been abundantly demonstrated, but whether the milk from tuberculosed animals has the same effect the writer was not prepared to decide. The

evidence was not as yet sufficiently conclusive, but was enough to warrant more care than is now exercised in ascertaining the health of our food supply.

The Chair fully agreed with Mr. McEachran as to the infectiousness of the disease, and recommended better supervision of the meat and dairies of large cities.

The Secretary read a letter from Dr. C. C. Lyford, describing a peculiar case in a cow that had been bitten by a dog supposed to be suffering from rabies.

At the next meeting Dr. Bell reads.

After a vote of thanks to Dr. Lyford and the essayists, the meeting adjourned.

EXTRACTS.

PLEURO-PNEUMONIA IN PENNSYLVANIA.

ABSTRACT FROM THE REPORT OF THOMAS J. EDGE, THE GOVERNOR'S AGENT.

Under an Act "to prevent the spread of contagious or infectious pleuro-pneumonia among the cattle of this State," passed May 1, 1879, Governor Hoyt issued a proclamation to owners of cattle, &c., requesting them to report all cases and suspected cases of such disease among neat cattle. Under the same Act the Governor appointed Thomas J. Edge, Esq., Secretary of the State Board of Agriculture, as his agent, invested with authority to carry out the object of the law. The *Record* is indebted to the courtesy of Mr. Edge for advance sheets of his report, from which is taken the following:—

Under the commission before quoted the agent of the Governor has (up to November 1) quarantined twenty-seven herds, including 408 animals liable to infection, and distributed in the following counties: Adams, one; Lancaster, four; York, one; Bucks, one; Delaware, four; Montgomery, five, and Chester, eleven. Of these herds eight (one in York, three in Montgomery and four in Chester) have been since released from the quarantine

and pronounced safe from another outbreak, except from a fresh infection from outside sources. As soon as the supposed existence of the disease is reported, each animal in the herd is inspected by a veterinary surgeon in the employ of the State, and, if the disease is found to exist, is promptly quarantined to prevent its spread to adjoining herds. In order, if possible, to prevent further contagion in the same herd, all diseased animals are appraised and killed.—*Philadelphia Record*.

PLEURO-PNEUMONIA IN NEW HAMPSHIRE.

CONCORD, N. H., Dec. 19.—This disease having broken out among the cattle of James Merrill of Haverhill, in this State, Governor Head called a meeting of the Council to-day and appointed a commission to act at once, as it is deemed necessary, to arrest the spread of the disease. The farmers in that part of the country are greatly excited over its appearance.—*New York Times*.

EXCHANGES, ETC., RECEIVED.

Gazette Medicale (Paris), Recueil de Medecine Veterinaire, Annales de Medecine Veterinaire (Bruxelles), Archives Veterinares (Alfort), Journal de Zootechnie (Lyons), Clinica Veterinaria (Milan), Revue fur Thierheilkunde und Thierzucht (Milan), Schweizerisches Archiv fur Theirhielkunde (Bern), Veterinary Journal, Veterinarian, Hospital Gazette, Medical Record, National Live Stock Journal, Prairie Farmer, Scientific American, Turf, Field and Farm, American Agriculturist.

JOURNALS.—Philadelphia Record, Gazette of Montreal, Boston Cultivator, Western Rural, &c., &c.

AMERICAN VETERINARY REVIEW,

FEBRUARY, 1880.

ORIGINAL ARTICLES.

LATENT GLANDERS.

BY PROF. A. LIAUTARD, M.D., V.S.

The question of contagious diseases amongst animals is one to which every sanitarian must pay more or less attention, and the various ways by which these affections are transmitted are no less important and interesting than the many different forms under which the pathological conditions may manifest themselves.

When disease exhibits itself upon an animal with an eruption of all the symptoms which every one knows, even if he may be unable to distinguish and recognize them, the task becomes quite simple. But when, on the contrary, the disease effects an insidious march ; when its manifestations are slow to appear ; when even with a rotten organism, an animal seems to enjoy perfect health, as shown by his external appearance, the condition of his skin, his good appetite, his ability to work, and the immunity enjoyed by other animals with which he may have been in contact ; then, how serious and more dangerous that disease becomes—how much

more important it is to be able to fully realize the condition and character of the disease.

There is, probably, none which comes under this peculiar aspect outside of glanders. How simple, in fact, it is for the veterinarian to establish a diagnosis of glanders, when the three essential pathognomonic symptoms of the disease are existing; when the gland, the discharge, and the ulcerated condition of the septum nasi are presenting the characteristic conditions belonging to that disease. But with how much hesitancy will an opinion be expressed in the absence of one of these symptoms alone, when the chancres of the septum nasi cannot be discovered, or when with this, the glands do not have the known condition of adhesion to the bones, and still more, when there is only a slight but characteristic discharge, perhaps at times bloody, with possibly a peculiar condition of the membrane of the nose, as regards color, smoothness or softness to the touch—in other words, when the patient presents only the external symptoms of that form of the disease, but recently recognized, and which to-day we speak of as latent glanders, be it laryngeal or pulmonary.

How extensive practical observations must one have made, how many cases must a practitioner see, before he can, in the presence of this form of the disease, send his patient to the knacker's yard without hesitation?

This form of glanders, as we all know, is the most dangerous of any; for the affected animal may remain, to all appearance, in perfect health, eating and working as well as ever, and yet capable, at the same time, of infecting and destroying many valuable animals with which it may come in contact. Even when a suspicious discharge from the nose continues, or appears at times, no danger is suspected by the owner, who sees in this symptom evidence only of a cold.

I have been prompted to make these few remarks by a single case of glanders which recently came under my observation, and the peculiarities it presented will, I believe, prove interesting.

Mr. W——, of this city, had a valuable mare, six years of age, a fast trotter, and valued at several thousand dollars. After a season of training she was sent to a breeding farm in New Jer-

sey, and, being covered, remained there for some time, after which she was returned to her owner in apparent perfect health. *She had a little cold, the remains of a kind of distemper which had run through the horses of the breeding farm. She discharged some from the left nostril;* but beyond that was in excellent condition. In due time she dropped a horse colt, which, from general appearances, promised to become worthy of his parents among the records of trotting horses. This was towards the beginning of May, 1879.

About the 16th of May I was requested to visit New Jersey, some sixty miles from New York, to examine the horses of a large printing works, where glanders was supposed to prevail to some extent, and while there was also asked to visit all the horses belonging to Mr. W——, a short distance off, and principally the mare in question.

I found the mare by herself, with her colt, a well formed and developed little fellow, a few days old. The mare was round, fat and smooth. She felt well and ate well, and seemed free from disease with the exception of a little discharge, and a slight swelling about the maxillary space. The discharge was not very abundant—less than it had been, I was told—but thick, sticky, and adherent to the nostril, which was more or less dirty from it. The gland was but slightly painful, somewhat well defined, and adherent to the bone. The mucous membrane was rosy, not granular to the touch, but of rather a suspicious hue towards the upper part of the nostril on the right side. Her history was given as above reported; she never had been around the horses of the printing works; had never been ill nor shown signs of sickness until since she came back from being served by the stallion.

But a short time before this I had had the opportunity to see glanders under all its forms, in several of the horse-car stables of New York, and had I at that time seen an animal in the same condition as this mare, I would have had no hesitancy in condemning her; but, with her history and condition, the value of the animal, the presence of the colt in his robust and healthy state of development, I hesitated and put her down on my note-

book as "*very* suspicious of glanders." The colt, it is true, was entirely free from disease, but I expected that he would soon come to my assistance and develop the disease also.

I had her taken away from the other horses and put in a place where all possibilities of contagion were removed, and she with her foal were ordered into most strict quarantine. She was prepared for and received a six-drachm dose of aloes 24 hours afterwards. At my next visit the aloes had operated and she was scouring freely, but showed no change in her general condition. The colt was as gay and healthy as before. The mare was then placed under the administration of mineral tonics and alterative applications of Girard's ointment (bichloride of mercury as a base) on the glands. At subsequent visits no change was detected; the discharge was, perhaps, a little diminished, the gland possibly smaller and more loose. She and the colt remained apparently healthy. Once, as I examined her, I found a few drops of blood in the discharge, and once I detected on the left side of the septum a very small abrasion. There was no more doubt now, and I expected three days after, at my next visit, to find and show the owner a well-developed ulcer, and then obtain his consent to have her destroyed. But no, everything disappeared. No more blood in the discharge; no more abrasion of the septum, which was rosy and looked healthy, the gland remaining the same. The mare looked well, the colt growing.

As both were far from the other horses, and in a place where contagion was impossible, I acquiesced in the desire of the owner to await further developments. The same treatment of mineral tonics and applications upon the gland was continued, with apparently no changes; though at times Mr. W—— thought the discharge had disappeared and the gland reduced entirely.*

About the middle of November I was consulted about her again, as to the propriety of putting her to work. As I had not seen her for several months, and as I could not come to a conclusion from the description of her condition given to me, I sugges-

* Some time afterwards the owner, at my request, collected some of the discharge upon a piece of glass, and with this I inoculated an old horse with negative results.

ted that she be brought to town and that I should see her.

On the 6th of December I visited her and found her in almost the same condition, with the exception that the discharge was more abundant and had then all the characteristic appearances of the nasal discharge of glanders.

Tired of this state of affairs, though yet in hopes that I might be mistaken, the owner came to the conclusion to let me have her, to do with her what I thought proper. As it was a case presenting unusual interest, and desiring to have the students of the Veterinary College watch her for a short time, I had her placed in an isolated box stall of the hospital, and put alongside of her, and inoculated, an old horse. The following is an extract from the report presented by one of the senior students—Mr. R. W. Foote—of the history of the two animals from the day of admission to the time when they were destroyed.

Symptoms in the morning:—Bay mare—Temperature, $102\frac{3}{4}$, pulse 38, respiration 12. Gland enlarged and adherent; discharge principally from the left side and slight from the right; has a short and moist cough; Schneiderian membrane healthy. She is prepared for a dose of physic.

Dec. 11.—Temperature 102, respiration 13, pulse 30 and weak.

Dec. 13.—Temperature 102, respiration 12, pulse 40; is purging well.

Her companion, the grey gelding, was inoculated on the outside of the left nostril, the right side of the upper lip and the Schneiderian membrane of the left nostril. The grey horse showed a temperature of $99\frac{3}{4}$, pulse 41; did not count his respiration, which was emphysematous.

The following are the symptoms presented by the two animals afterwards.

Dec. 13.—BAY MARE.—Evening: temperature $102\frac{3}{4}$, respiration 17, pulse 56. GREY GELDING.—Evening: temperature $103\frac{3}{4}$, pulse 42; no change in external aspect.

Dec. 14.—BAY MARE.—Morning: temperature $102\frac{3}{4}$, respiration 18, pulse 52. Evening: temperature $101\frac{1}{4}$, respiration 17, pulse 52. GREY GELDING.—Morning: temperature 103, pulse

44. Evening: temperature $103\frac{1}{2}$, pulse 46; injection on mucous membrane of the nose swollen and congested.

Dec. 15.—BAY MARE.—Morning: temperature $102\frac{1}{4}$, respiration 19, pulse 48. Lymphatics on the left side of the face are swollen and tender, has two little red spots on the mucous membrane of the left nostril. Evening: temperature $101\frac{1}{2}$, respiration 12, pulse 42. GREY GELDING.—Morning: temperature 102, pulse 48 and weaker; the red spots of yesterday look better and seem to disappear. Evening: temperature $101\frac{3}{4}$, pulse 40.

Dec. 16.—BAY MARE.—Morning: temperature $101\frac{1}{2}$, respiration 14, pulse 34; gland of the right side a little enlarged; right and left nostrils of a slight lead color and glossy in appearance; one of the red spots spoken of on the 15th has developed a nice chancroid ulcer. Evening: temperature $102\frac{2}{3}$, respiration 11, pulse 36. GREY GELDING.—Morning: temperature $101\frac{1}{2}$, pulse 40; the abrasions on the inoculated spots of the Schneiderian membrane are disappearing, but the inoculations on the nostrils have now the appearance of farcinous ulcers and discharge a thin, bloody pus; the glands are yet of the natural size. Evening: temperature $101\frac{3}{4}$, pulse 42.

Dec. 17.—BAY MARE.—Morning: temperature $102\frac{2}{3}$, respiration 11, pulse 38; profuse discharge from left nostril, large ulcers on the left nostril. Evening: temperature $103\frac{2}{3}$, respiration 14, pulse 38. GREY GELDING.—Morning: temperature 102, pulse 38; lymphatics of the neck swollen and sore; inoculations on the nasal mucous membrane all healed but still a little red; slight discharge from both nostrils; inoculation outside of the nostrils looks bad and characteristic of farcy. Evening: temperature $100\frac{1}{2}$, pulse 38; the inoculation of nostril looks ulcerated.

Dec. 18.—BAY MARE.—Morning: temperature $102\frac{2}{3}$, respiration 14, pulse 38; ulcer is larger. Evening: temperature $102\frac{2}{3}$, respiration 14, pulse 38. GREY GELDING.—Morning: temperature 102, pulse 38; same condition. Evening: temperature 101, pulse 38; he was sent to the offal dock.

The mare was destroyed on the 20th. Post mortem examination was held immediately after death.

The chest was opened on the left side and the trachea and

larynx removed. All over the surface of the right lung were white spots, granular in appearance, projecting and hard to the touch; the anterior portion having these in greater number. The surface of the left lung had the same appearance, excepting that the tubercular deposits were not so numerous. Some portions of the lungs were emphysematous. On cutting into the lung tissue, nodules were found all through its substance, and many of them, being cut into, showed little collections of pus. These little bodies varied in size from very minute to the size of a bean. The lung substance was easily torn and could be readily punctured with the finger. The bronchial tubes being opened were found all healthy and free from ulceration, but containing here and there a small amount of muco-purulent discharge. In the trachea no lesions were found, but on the right side of the larynx in the ventricle existed a larger ulcer, while smaller ones were detected scattered upon the mucous membrane. Lymphatic ganglia of the trachea were much enlarged. On antero-posterior section of the head, a little to one side of the median line, there was presented to view in the left nasal cavity the turbinated bones extensively covered with ulceration, both externally and internally; the upper portion of the nasal turbinated being filled with suppuration. On the internal surface of the same bone existed a small granulema hanging somewhat in the cavity of the nasal fossa. On the left side of the septum nasi many ulcerations were found near the upper border and the sigmoid portion. The chancres of this cavity had all the appearance of acute ulceration and their development was probably excited by the debilitated condition of the patient following the severe purging she had been subjected to. The right nasal cavity was free from ulceration, but showed beautiful swelling and engorgement of the lymphatics, which appeared like farcinous cords running under the mucous membrane. The sinuses were free from suppuration or ulcer.

What now will become of the colt? So far he is healthy and robust. Nothing in him indicates that he is likely to break down and will have to be destroyed as glandered. Is it possible that he may develop into a fine horse which, however, when the time

comes, may be affected with some severe form of disease that, debilitating his system, will soon excite the manifestations of glanders and then give rise to the so-called *spontaneous* development of an affection which he has kept within himself until then, and, which he had inherited from his mother *in utero*?

SUPPURATION OF THE FOOT AFTER NEUROTOMY.

BY A. A. HOLCOMBE, D.V.S.

On the 20th of October, 1879, I saw an eight-year old brown mare, with navicular-arthritis of both fore feet, complicated by side bones. She had been lame for the preceding nine months, a greater part of the time. For several weeks previous to my being called, she had been excessively lame, so that she was discontinued from work; simple exercise caused such suffering that her body was covered with sweat, and she could not be kept in condition. In the stable, she pointed continually, but most with the near foot. An unfavorable prognosis was given, and neurotomy recommended. After careful preparation, the operation was performed on the 24th, resulting in complete insensibility of both feet. She walked well, at once, and seemed entirely free from pain. The operating wounds healed kindly, by the second intention, with the exception of the outside one on the off leg, which healed by the first intention. She improved rapidly in condition and spirits, and at the end of two weeks' time, was taking a little walking exercise to the halter every day; yet at irregular intervals the near fore foot was advanced and seemed to cause a little uneasiness, although there was no lameness. At the end of four weeks she trotted sound as ever, and the feet presented a fine condition, with the exception of the fever. The cicatrices on the near fore leg were still unusually sensitive to compression. At the end of five weeks the mare was clipped, and the owner being desirous to obtain her use, she was put back to work in a coupé upon the city pavement. For the first few days she made two or

three short calls daily, and stood the work well, with the exception of a tendency to interfere on the near leg. Whenever this happened, she would go lame for a few steps, and then go sound again. This leg was now booted, and the mare received hard work for about two weeks, when she went lame on the off hind leg, from curb, and favored the near fore leg whenever at rest. On being called to see her now, I found the near leg infiltrated with serum as high as the knee; intense pain from the slightest pressure at the point of operating, and the lymphatics inflamed and tender. A close examination revealed much fever of the foot, and the slightest suppuration on the outside heel, near the line that divides the horn and skin. There was a slight abrasion of the skin at this point, and the tissues appeared bruised beneath. Cold water treatment was instituted at once, but did not arrest the progress of the suppurative process, for in a few days' time the hoof was half sloughed away, and the animal was destroyed, to prevent unnecessary suffering. In making a post mortem examination, some interesting lesions were found. The navicular bone of the near foot presented three large ulcers, extending deeply into the bone structure, while the surrounding tissue was discolored by the inflammatory changes, and adhesions formed between the tendon and the navicular's bursal surface. The os pedis showed periostitis of a greater part of its surface, the process, in many places, being accompanied by suppuration. Toward the toe, the suppuration was confined to the outer layers of the periosteum and the keratogenous membrane, but on the superior portion of the anterior surface, and over both the retrorsal processes, the entire periosteum had sloughed away, leaving the bone tissue exposed. The external retrorsal process was almost completely destroyed by caries, while the same destructive changes had begun just beneath the attachment of the extensor pedis, and on the outer surface of the internal retrorsal angle. The side bone upon the outside wing of the os pedis was fractured across, about half an inch from its superior border, probably as the result of the injury which at the same time caused abrasion of the skin on the heel, and started the suppuration. The coronary band was greatly thickened from infiltration, and both quarters were freely

suppurating, so that the horn was completely separated at these points. An examination of the internal plantar nerve showed, upon the distal extremity, the development of a neuroma, which accounted for the tenderness of the parts and the tendency to rest that member. The external nerve was cicatrizing in the usual manner. The internal digital artery and the lower part of the collateral of the cannon, had undergone degenerative changes, which had terminated in a complete occlusion of the caliber for a distance of four inches. The subcutaneous connective tissue contained much effused serum, while the lymphatics were distended with fluid, and a greatly increased number of cellular elements. The off foot presented only simple navicular arthritis and small side bones.

STRYCHNIA IN SPINAL MENINGITIS.

BY A. A. HOLCOMBE, D.V.S.

Since the early summer months of 1876, I have been studying the effects of strychnia in spinal and cerebro-spinal meningitis. In the latter form of the disease, the only cases that ever recovered for me were those that received large doses of this remedy, in conjunction with the use of belladonna. The same treatment has proved most effective when employed in uncomplicated spinal meningitis. I have had a recent opportunity to test its efficacy in an acute attack of the disease, and with such favorable results as to warrant the report of the case.

The subject was a nine-years-old gelding, used for light coach work, which he had performed regularly up to the morning of the 21st of December last, when he was noted off his feed and standing listless in his stall; but when moved out walked as well as usual. At one o'clock P.M., I found him standing in the stall with marked opisthotonos, scarcely able to move the hind parts in progression, and wobbling from side to side as though about to fall. His pulse was beating at eighty two per

minute, and so weak as scarcely to be detected at the jaw. The respirations were accelerated to twenty; the mucous membranes slightly injected; the hind extremities cold, and the temperature at $104\frac{3}{5}^{\circ}$ F. The urine which he was seen to pass during the morning, looked normal, but constipation was quite marked. Believing from the rapid development of symptoms, especially the loss of power behind, that he would live but a short time and could not long remain standing, he was placed in a box stall, and received seven drams of aloes, one dram of ginger, and half a dram of calomel in a ball. This was followed by ounce doses of tr. belladonna every two hours, a strong mustard poultice to the lumbar region, and soft food, with plenty of water, ordered. Early next morning he was purging freely, the fæces being very soft and of unpleasant odor; the pulse stronger; the temperature at 104° ; the respiration sixteen, but no appetite nor improvement of locomotion. He now received half grain doses of strychnia every two hours, in conjunction with the tr. belladonna every two hours between. On the 23d there was no improvement noticed, and the purging still continued. The dose of strychnia was increased to one grain every two hours. On the 24th the temperature was down to $103\frac{3}{5}^{\circ}$; the pulse at seventy-eight; the respiration at sixteen; the purging remained free as on the 22d, and very fluid; no appetite, but some slight improvement in the gait. To arrest the purging and stimulate the appetite, the strychnia was now given, in one and a half grain doses, in solution in ounce doses of tr. capsicum. The belladonna was continued, and another poultice of mustard applied to the loins. The purging stopped within six hours, the appetite returned, and marked symptoms of improvement were present at the time of next visit. The dose of strychnia was gradually increased and the belladonna diminished, until the patient took four grains of strychnia every three hours, and yet no signs of poisoning from the drug could be detected. Within two weeks' time he was taking exercise, and resumed work after three weeks of sickness and convalescence. The conclusion I have come to regarding the use of strychnia in these diseases is, that they demand large and oft-repeated doses of the drug, and that when the appetite fails, or excessive purgation results from

the purgative, it should be given in the tr. of capsicum. As seen in this case, the system stands large doses without unfavorable developments; for marked as was the opisthotonos at first, it was at no time increased during the administration of the strychnia.

EDITORIAL.

ARMY VETERINARY SURGEONS.

In back numbers of the REVIEW we have presented our readers with the statutes regulating the positions, requirement, rank and pay of veterinary surgeons in the English and French armies. In this number we reprint an article upon the same subject regarding the Italian military service. Our object in doing this is to present our military authorities with true light on this subject, and possibly to assist them in the work of reform which we are told, is to be inaugurated in that branch of the service. An improvement has already been inaugurated, published in September, which states that "Hereafter appointments as veterinary surgeons will be confined to graduates of established and reputable veterinary schools or colleges." This is an important step, but is it likely to be carried into effect, if one looks at the position, and above all, the *pay* of said veterinarians?

To be able to answer the many inquiries which have been made me, I wrote to the Adjutant-General of the army, and his answer will be found in full in this number of the REVIEW. As will be seen, the pay is nominal. What are seventy-five or a hundred dollars a month for a gentleman, who, by his education and his knowledge, ought to expect to realize, by his profession, a much larger return for his work; and besides, what is the position of the veterinarian in the United States service? Is it anything like that which we find in other armies? Has he a rank? Is he an officer? Is he even a military man? We understand, though we have no official authority for it, that he is not enlisted, but is merely a civilian, which is called upon to perform certain military

duties. How does he live? Is he expected with this meagre allowance to furnish himself with the necessaries of life—his uniform (if any is required), his horse, his equipment? Where do they come from? Of course we must acknowledge that we are somewhat ignorant on the subject.

In the French army a first gift of 400 francs is made to licentiates for equipment, and a supplement of 500 francs to those who are promoted as assistants. How is it in the American service? We hope some of our military brothers will favor us with information on the subject.

Another important question, however, presents itself—upon which we have already dwelt—that is, the manner in which the appointment is to be made. The new regulations say that it is to be made by the Secretary of War only on recommendation from the commanding officer of the regiment; and the letter of the Adjutant-General says, “upon the favorable report of a regimental examining board.”

In Europe examinations are also required. Some of them are very severe, being written, oral and practical. Now what is the examining board for admission in the United States army to consist of? Certainly it cannot be composed of veterinarians, and if made up of physicians will it be a competent Board? These are points of major importance, and which we hope will not escape the attention of the gentlemen engaged in the work of reform.

What we hope to see established is a regular corps of veterinarians, with a principal inspector, and his officers distributed in the different regiments of cavalry. What the reforms must principally rest upon are regular appointments, with rank, quarters and privileges of officers, and pay in proportion to the education and ability of the veterinary practitioner, with a social standing equal to the surroundings in which he may be placed.

PLEURO-PNEUMONIA IN THE EASTERN STATES.

The subject of contagious pleuro-pneumonia does not seem in any wise to be losing its interest to the public in those localities where it already exists or where it may readily be introduced.

In a Massachusetts paper recently sent us appeared an article relating to a disease with which a heifer was affected and destroyed at South Hadley. Dr. Cressy of Amherst was called to see the case, which had been suspected as pleuro-pneumonia. His post-mortem examination showed the lungs to weigh twenty-six pounds. The bronchial tubes were found full of mucous froth. "Dr. C. pronounced the disease catarrhal fever or bronchial catarrh. This was a decided relief to the farmers in that vicinity, *as another animal was similarly affected** and an outbreak of pleuro-pneumonia thought to be imminent. Dr. C. was called the third week in November to Waterbury, Ct., where he found *twenty or thirty cases of the same disease*. He also encountered it at Hartland, Ct. It is not contagious and no fatal cases have been reported, although the one at South Hadley would, undoubtedly, have proved so. It is an influenza somewhat like the epizootic which afflicted horse-flesh in 1872, although, happily, not yet as widespread." Our readers may draw their own inferences from the above report, and some will, no doubt, recall similar expressions of opinion given a year ago regarding pleuro-pneumonia in New York.

The *New Hampshire Patriot*, issued at Concord on Jan. 8th, 1880, under the head of "Pleuro-Pneumonia," contains a long account of an outbreak of disease at Haverhill, N. H., and which had given rise to considerable excitement among the people of the vicinity, who suspected it to be contagious pleuro-pneumonia. Dr. Thayer of Boston, Mass., visited the affected animals on the 29th of December, in company with the State Commission, and the results of his investigation are given below in conjunction with the reporter's description of the hygienic conditions found. The barns seemed to be well situated for light and air, but the Commission objected to the ventilation. Twenty calves were found housed in a space eighteen feet long, twelve feet wide and seven feet high—being tied up in two rows, one on either side. "There had been improvement in the sick animals since the time of the Commission's first visit, but quite a number were more or

(*The italics are ours.—Ed. A. V. R.)

less affected with a cough. A red calf that was examined showed a respiration of 40 and a pulse of 80, and this was the only animal in the herd that could be said to be dangerously ill, though the owner regarded others in a similar condition.

"The first animal looked at was a calf that was picked out by Mr. Merrill (the owner). Dr. Thayer declared, after a careful examination, that there was no acute disease affecting it. The lungs were sufficiently resonant to refute the theory of the existence of pneumonia. The second calf was found to be in an equally favorable condition. A light-colored cow, that, to all external appearance to the casual observer, seemed to be the sickest animal of the herd, was next examined. There was a little dullness on the left side. Her temperature was 101°, pulse 60 to 62." After examining some others which were sick and making post-mortem examinations upon two, in which lesions of pneumonia were found, the conclusions of Dr. Thayer are given as follows: "Mr. Merrill's herd is affected with pleuro-pneumonia. The disease is not of the contagious character. It is enzootic, or, in other words, confined to one locality." Further on it is said, "the disease arises from improper sanitary condition about the buildings." It would seem, though, that some outsiders are inclined to think the housing of a herd of Canadian cattle in the barn last fall had something to do with the outbreak. At a meeting of the public in the town hall in the evening, among other remarks by different persons present, Mr. Merrill said: "My barn seems to be well ventilated, and I cannot see how cows should be affected when all admit that the cow-stable is in good condition. Neither can I explain why some of these same cattle should be taken sick before they came to the barn, if it is the sanitary condition of the buildings that produces the disease." Later in the discussion, Mr. Merrill asks, "How do you explain the coughing of my cows that have been in good quarters?" To which Dr. Thayer replied: "The coughing of the cows is no more than I have frequently and commonly seen in barns where cows are fed on dry feed. There is no disease among your cows, only in the case of the cow specified above, except what might be produced by dry food."

Dr. Watson then remarked: "If I understand you, doctor, you would quarantine these cattle." Incomprehensible as it may seem to the profession after what was said above, Dr. Thayer replied: "I should in Massachusetts, because we have authority to do it. We have saved money by it. The little expense attending quarantine is small compared with an extensive loss of cattle." Mr. David Whitcher said: "I have had some trouble with my cattle. They have had a cough and still have one. They breathe badly, still they are in good condition otherwise and feel well." Mr. Merrill finished by saying that some of his calves that had been sick were bought out of the drove and some were raised on the place. Also that a neighbor bought two nice calves last fall and they soon commenced to run down and afterward died.

The above extracts embrace everything of importance that can bear upon the question of contagious or non-contagious pleuro-pneumonia in this outbreak of disease. Dr. Thayer says it is enzootic and is not contagious. According to the testimony of the farmers, given above, the disease is present upon at least three farms, on two of which calves were introduced recently from a drove. One cow had the appearance of being quite sick; and yet with dullness upon one side, a temperature of 101° and pulse 60 to 62, she is pronounced to have non-contagious pleuro-pneumonia.

But why quarantine cattle that have a disease in no way communicable to others? How can money be saved by it, or why is there any danger of extensive loss? We confess to being unable to understand that any necessity can possibly exist for the adoption and enforcement of measures which look to the prevention of the spreading of a disease that has not the power to progress beyond the limits of the local exciting cause. Sporadic pleuro-pneumonia of cattle is a very rare disease, and in an enzootic form much rarer. Still we believe Dr. Thayer's long-time experience with this disease is such that his opinion must be accepted, notwithstanding the circumstances reported might make us suspect the disease was contagious.

REPORT OF THE CATTLE COMMISSION OF NEW JERSEY.

Dr. Corlies, one of the veterinary surgeons to this Commission, makes a report to the Governor's agent on the 15th of December. After having been engaged in an attempt to free the State of contagious pleuro-pneumonia, for the previous eight months, we find set forth in concise terms, the measures which have been adopted for the suppression of the disease; some of the obstacles met with; an expression of opinion as to the value of methods that should or should not be adopted; the number of animals that have been examined by the inspectors; the number found diseased and the number destroyed; but wisely refraining from an opinion as to the condition of the State regarding the prevalence of the disease at the present time. New Jersey is not yet clear of this *plague*, and she will not be so long as she continues to release from quarantine, after a period of ninety days, animals that have had the disease.

PETITION TO CONGRESS.

At the annual meeting of the Philadelphia Society for the Promotion of Agriculture, Dr. Gadsden called attention to the subject of contagious pleuro-pneumonia, and after remarks by different members Mr. Burnett Landreth offered the following preamble and resolution, which were adopted:

Whereas, It is patent that the ravages of the "lung plague," or pleuro-pneumonia, can only be arrested by heroic measures, be it

Resolved, By the Philadelphia Society for the Promotion of Agriculture, that the General Government be urgently requested to take such action as will prevent the transport of cattle from infected districts in the seaboard to the interior, which will certainly be infected unless decisive action be taken by the United States Board of Health, or other proper department.

VETERINARY MATTERS IN PENNSYLVANIA.

The sixth quarterly report of the Pennsylvania Board of Agriculture has been received. Among other matters appears the report of the Secretary of the Board, who, as special agent of the Governor, has been dealing, since the 1st of May, with contagious pleuro-pneumonia. After giving a summary of the legislative action in regard to the disease, the Commission issued by the Governor, and his own order to "all owners of cattle," etc., etc., the Secretary reports that twenty-seven herds, including four hundred and eight animals, have been quarantined. That a stamping-out process has been adopted which can, by any possibility, prove effectual, does not appear from this report; for on page 26, under head of "Herd No. 2," appears the following: "Contains twenty cows, two bulls and ten calves; was quarantined June 12. Previous to quarantine, four head had died, and after the enforcement of the quarantine, fourteen head were killed. With one possible exception, *all* the animals were affected, and a number of them are now in a condition in which they are worse than useless to the owner. In this case, the evidence is strongly in favor of the theory that the owner conveyed the disease to his herd by assisting in the care of another infected dairy. No spread of the disease to adjoining farms; but it is quite probable that the disease was carried from this herd to herd No. 8 in the clothing, or on the person of the owner, who administered medicine to both herds. This herd has furnished an illustration of the disease in one of its worst forms, but is now believed to be clear, but not beyond the danger of infecting other stock."

From the above statement it will be seen that twelve head of the original herd still live, and "a number of them are now in a condition in which they are worse than useless to the owner," yet further on he believes the herd "to be clear." Clear of what? Clear of the disease? If so, why are they "not beyond the danger of infecting other stock?"

Herd No. 1 was released from quarantine on September 4th, and "were as well as they probably ever will be." Herd No. 23, "at the request of the owner, are being treated by our surgeon."

Turning to their published list of officers of the Board of Agriculture, Dr. C. B. Michener appears as the veterinary surgeon, and presumably he is the "our surgeon," who is treating contagious pleuro-pneumonia with "the fumes of burning sulphur" as a measure of eradication.

A more suicidal policy than that adopted by the State of Pennsylvania, as inferred from the report before us, can scarcely be conceived. Better far for the interests of the country and the veterinary profession, that the disease be allowed to follow its own course, than that a tampering policy should be attempted, which can only result in disaster. The admissions of the special agent of the Governor show that he either knows nothing whatever of the dangers attending the disease with which he is dealing, or else is blind to the responsibilities which the State has placed on him.

In his commission, the Governor directs his agent to slaughter diseased animals whenever it is found necessary, and yet treatment is attempted upon some, while others are freed from quarantine before they are free from the disease! Such measures can never prove effective as a means of suppression, and the presumed security which official assurance will serve to cultivate in the people, must react to produce an unguarded spread of a disease so insidious as pleuro-pneumonia.

"*Abortion among cows*" is also treated of in this report by Isaiah Michener, V.S., chairman of a committee, appointed by Governor Hoyt, to investigate this disease. The report offers nothing new, and omits very much of importance that is already known to the profession, concerning this very interesting subject.

HYDROPHOBIA.

The recent experiments of M. Raynaud prove conclusively that the saliva of hydrophobic human patients is capable of transmitting the disease to the lower animals, and presumably also to man.

His experiments consisted in the inoculation of rabbits with saliva from a patient, the day before his death, which served to

induce the disease in these animals in from four to five days' time.

Inoculation from these rabbits to others also produced the disease in about the same length of time. The predominating symptom in these cases was paraplegia, there being no furious stage.

NOTICE.

Ever since its first publication, the REVIEW has been regularly issued in the first part of each month, between the second and fifth, and it has been our endeavor to have it delivered always as regularly as possible. Still, we now and then receive complaints that it has not reached the anxious subscriber. We cannot account for this except from some defect in the direction or possibly in the delivery at the post office. To try to remedy this, we would ask our subscribers who may have changed their domicile since their last subscription, to send the new and proper address, to which said REVIEW can be then properly directed.

A TESTIMONIAL.

A circular calling for subscriptions to a Testimonial to Sir Frederick Fitzwygram has been sent us and will be found in the present pages.

Sir Frederick has shown much interest in the advancement of veterinary science in England, and exerted much of his influence in behalf of the profession and its members.

The testimonial we have no doubt will prove a great success.

VETERINARY HONORS.

M. BOULEY (member of the Institute) has been appointed Titular Professor of Comparative Pathology, a new department established at the Museum of Natural History.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME; OR, HORSE VARIOLA.

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS
A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

BY M. L. TRASBOT.*

(Continued from page 404.)

The different experimental and accidental modes of transmission of gourme, being now described in a general way, we must, in a few words, consider now the various forms that it may assume, and look for the causes of its complications, whether mild or serious. From a short exhibition of these we will arrive at the rules to follow to keep the disease in its natural limit of pustular development, free from all serious complication, and thus only likely to terminate by a certain and rapid recovery.

To this day, so as to describe the complete pathological history of this disease, it has been customary to divide it into benignant and malignant. The first including all the catarrhal inflammations of the anterior respiratory organs, with or without abscesses of the lymphatic sub-maxillary ganglia. Even this was by many subdivided into various species. Delafond divided it into mild and severe, according to the intensity of the local phenomena and of the febrile action accompanying them, but ending nevertheless, after varying lengths of time, by a complete resolution. Under the name of malignant gourme, were also grouped all the complications likely to endanger the life, or at least to leave behind them long or even incurable marks of the existence of the disease; such as lobular pneumonia, severe bronchitis, abundant and continual suppurations, &c.

* Translated by A. Liautard, M.D., V.S.

This division was acceptable, and even in those days obligatory. When the irregular manifestations of the disease only were considered necessary, these were to be classified. To day this cannot be. It is necessary to consider, first the normal form, and then all that which was looked upon as belonging to it.

Desiring to prove that gourme is essentially equine variola, I must first speak of the pustular eruption, and afterwards mention all the inflammatory accidents resulting from any cause interfering with its development.

The regular eruption of gourme was described under the name of horse-pox, by M. Henry Bouley, Vol. IX of the *Dictionnaire et Medecine Veterinaire*. It would be useless for me to reproduce it. Complete and precise as it is, I would have nothing to add to it. There is, however, a point of detail upon which I may say a word, and that is relating to the configuration of the pustules at the middle period of their evolution.

M. Bouley says: "These vesicles were smooth at their surface without any depression; they had a pearly appearance." This is indeed their true form when they appear after what may be called the internal infection. They are regularly hemispherical, until the time when the epidermis which covers them is torn or raised as a small disk, to allow the escape of the virulent serosity accumulated underneath it.

Still, all authors repeat that the pustule of horse-pox, like that of vaccine, is umbilicated at its apex when it arrives at the period of secretion. Many amongst them indicate even this center of depression as a condition almost specific. This is an error, resulting from the fact that it is inoculated horse-pox which has been always observed. The umbilicated condition is, indeed, seen only upon pustules developed at the point proper of the inoculation. All the others, if they have not been frayed at their summit, remain perfectly rounded, till the time when their epidermis is falling off they are covered with an irregular scab. Things are here identical to what they are in sheep, and probably also in all other variola.

When a sheep is inoculated with variola, the pustules which are developed at the point of puncture are also developed in their center at the period of secretion, while all over in other places,

other than those of inoculation, they are hemispherical, exactly as if they had been developed on a subject infected by surrounding causes. This explains why, at a certain time, discussions were carried on upon the true form of the varioloid eruption in sheep, in which some authors have recognized as a specific character the umbilicated condition. This disposition is the effect of inoculation. It is not specific to the variola of any species.

At the point of puncture, immediately and by first intention, a cicatrix of the small wound takes place, and, as a consequence, an adhesion, somewhat more solid between the dermis and epidermis of the skin, in such a way that the secretion, taking place several days later, raises more easily the epidermis round the cicatrix than upon it; hence, the formation round this of a circular projection, which surrounds it and leaves it a little hollowed—umbilicated in form.

This is why, though it does not make it an essential character, pustules of *inoculation* are umbilicated in the horse; why also, upon individuals of the bovine species, as in man, vaccinal pustules developed from inoculation, are invariably depressed in their center for a certain time. Consequently, it is not exact to say that this disposition is a distinctive sign of equine pustules. I have insisted on this point because some practitioners might hesitate to make a diagnosis on observing that the character, so-called specific, might be missing.

This stated, I will not go into the clinical description of equine variola, as it is well known. If there is a point which may require, however, some explanation, it is that concerning the confluency of the pustules in some parts of the skin. First M. Bouley, and afterwards every one has shown that the eruption is often most concentrated at the inferior extremity of the head or upon one leg, where it has been taken for grease. At other times it has been found round the external genital organs, and these were considered as places of selection. Was this a good interpretation? If the concentration of the pustules took place only on the head or around the genital organs, the fine condition, vascularity and sensibility of the skin of those parts might account for this fact; but the same takes place as often at the inferior extremity of the

extremities, where the dermis and epidermis is very different ; this explanation then, for us, loses considerable of its value. Is it not rather at the point of entrance of the veins that the eruption is greater ? From the few examples reported before, this possesses a greater amount of probability.

And if this was once well established as a fact, it would bring us to select certain parts on which to practice the inoculation, and I believe it will one day be an economical measure to prevent the losses from the accidents which so often complicate this disease.

However, it is positive now that equine variola, limited or confluent, is a simple affection radically curable when its eruption takes place without interference. Coming fortuitously, either by a kind of primitive elaboration of the virus in the equine organism, if this is possible, or by an accidental inoculation whose mechanism is almost always unknown, or that it has been communicated by experiment, in every case it leaves the animals in perfect health after its regular evolution. A few small pale spots may sometimes be seen upon glabrous surfaces, and still these disappear with time. The subsequent deposit of pigment on the narrow circles they form conceals them entirely. There is no more doubt about this. Facts accumulated for years are so numerous that they form together a certain and irreffragible proof. We can then affirm to-day without fear, that equine variola is the least serious of all those which are peculiar to man, sheep, pig, turkey, dog, &c.

Why is it so inoffensive compared with the others ? This is a problem which has yet to be solved. But it is well known that preserving its eruptive form, it does not kill ; not only in the different zoological species on which it has been inoculated and in which it remains local, but even in the species to which it belongs. Here, even though it may be generalized, life runs no risk as long as the disease is not interfered with in its evolution.

This being admitted, let me give the reasons why I consider horse-pox not only simply as the analogue of other variola, but also the true natural form of gourme. The reasons from which

this conclusion is derived, result from the data furnished to us by comparative pathology, and specially from the rigorous analysis of the phenomena proper to gourme.

Variola of man is often followed after its eruption by the formation of subcutaneous and intermuscular abscesses, lymphangitis and even pyohæmia. When the eruption is interrupted by any cause whatever—cold, bad hygiene, bad lodging, etc., as is seen in the epidemics raging amongst soldiers while in campaign, it is often complicated with capillary bronchitis and lobular pneumonia which is rapidly fatal.

It is true these complications are seldom seen in man. They are quite exceptional, while angina and bronchitis are almost a rule in the gourme of horse. But this difference is easy to explain.

As soon as man feels himself suffering with the fever of incubation of this disease, he goes to bed, keeps himself warm—in fact places himself in the most favorable condition for the cutaneous eruption. The horse, on the contrary, often remains all day long in fairs, wagons, bad hotel stables, exposed to cold, rain or winds. All these conditions, which were considered first as causes of development of the disease, have in reality for effect to prevent its external eruption, and by repercussion to give rise to all the inflammatory accidents, considered, right or wrong, as the fundamental causes.

During the existence of an epizootic of small pox in sheep, many animals are seen upon which the cutaneous eruption aborts, if the flock has been exposed to the inclemency of the weather. Then also we have bronchitis and lobular pneumonia. After the regular eruption of varioloid pustules, one may even sometimes see large subcutaneous abscesses. This is, however, rare in sheep, in which the organism is but slightly pyogenical.

All these deviations in the course of the variola of man and of sheep, constitute, no doubt, accidents generally more serious than the catarrhal inflammations of the throat, which are the most common and prominent form of gourme. But one must consider also that these same diseases, in their regular form, are accompanied with a fibrile condition more severe, and of general

troubles more dangerous. There is, altogether, an exact proportion between the extent and the malignity of the normal and abnormal phenomena belonging to one and to the other affections. As to the nature of the pathological processes, they are identical in all the cases. Notwithstanding external modifications more or less marked, they, in reality, present no fundamental difference. And besides, the deviations of the equine disease are far from being always mild. Some capillary bronchitis and all the gourmy pneumoniae, lobular or others, are most generally fatal. Their course is slower, but they remain, nevertheless, incurable.

Comparative studies of pathological physiology show consequently a similarity easy to recognize between gourme and variola of man and of sheep; and this resemblance becomes altogether evident when one studies minutely all the symptoms by which it manifests itself.

First of all I will remark that in gourmy horses, one, by close searching, will almost always find several pustules, varying in number, on different parts of the surface of the body. Whether the disease has the appearance of a simple angina, of bronchitis, or even of pneumonia, never is the specific eruption entirely missing. It is easier to find it in man or sheep, whose skin always show slight flat patches, red or brown, even very noticeable when the pustules are stopped in their development. On the horse, the pigmentation of the skin and the thickness of the hair conceal this sign, so well marked in other species. And it is more to the staring condition of the hair and to the presence of a kind of small lenticular nodosity that it can be discovered.

This explains why they are often passed unobserved. Still it is possible, as in some extremely rare cases, that it cannot be recognized; when, for instance, at the onset of the incubation, a serious pneumonia carries off the patient in two or three days. Some young horses may be seen dying in such a short time. It is evident then, that there is not the slightest beginning of an eruption. But these facts are generally exceptional, and do not alter the character of the idea I am trying to establish, for the same thing may happen in sheep.

Another good proof of what I have stated, is that under the influence of good hygienic care, some horses, presenting first exclusively the symptoms of incipient angina, have two or three days later an eruption, whose appearance is followed by a marked improvement in the local pathological condition. Often have I noticed this condition, and especially lately, in one case which seems to contain alone a true demonstration of the changes in the symptoms.

A gentleman had a four-year-old, which, for about twenty-four hours, had shown the symptoms of a high fever, accompanied with symptoms of a pharyngitis which threatened to be very severe. There was anorexia, dysphagia, abundant salivation and great soreness on pressure of the throat.

Knowing that the animal had come recently from a dealer's stable full of gourmy horses, I thought immediately that this pharyngeal angina might be a manifestation of gourme. Consequently I placed him in a protected stall of the stable, covered him well with two warm blankets, and prescribed for treatment only warm hay tea *ad libitum*; for food anything he would take, and that was but a few grains of oats. Three days later he had a magnificent generalized eruption of horse-pox, and the angina cut short. From this moment he ate with relish hay, oats, mashes, &c., until his recovery, which was quite rapid.

I believe this observation has a great signification. Added to the preceding consideration and the proof obtained on the cow, inoculated with the serosity obtained from the nostrils of a gourmy horse, which I have mentioned before, it constitutes with them a mass of evidence whose probative value cannot be contested.

If then, as I hope, it is clearly established by all these details, that gourme is essentially horse-pox, we come immediately to the conclusion that inoculation is the means most likely to prevent all complications, the probable causes of which I will try, in closing, to indicate.

(*To be continued.*)

REPORT OF CASE.

RUPTURE OF THE FLEXOR METATARSI.

BY C. B. MICHENER, D.V.S.

Editor Veterinary Review:

The literature of cases of ruptured flexor metatarsi of the horse being somewhat rare, I am led to believe that it will not be uninteresting to your readers to report this lesion as it occurred in my practice. Particularly is this case worthy of note since the exact seat of the lesion was clearly defined; also, from the fact of the rapid recovery made, considering the age of the horse.

The subject, a black gelding, seventeen years old, was out at grass on Nov. 4th, 1879. He was entirely free from lameness when the owner went to the field to catch him for work. The horse started to run along a hillside, but soon slipped and fell to the ground. The off posterior extremity was extended backwards, and dragged for twenty or thirty feet while falling. On regaining the erect posture, the horse was noticed lame in the off hind leg. I saw him on the 10th, six days after the accident, the owner having been convinced that the leg was broken.

While standing still, the leg was in its normal position; all that could be detected was a slight swelling and some heat at the antero-superior part of the hock joint. When made to move, the inability to flex the hock was plainly demonstrated, and the relaxation and corrugation of the tendo-Achillis was well marked. In advancing the leg, the part inferior to the hock was merely *carried* along, and the power to direct the special movements of this part of the limb was almost entirely lost.

I diagnosed a rupture of the tendon of the flexor-metatarsi, at its division in front of the inferior part of the tibia.

The horse was treated by being placed in his stall; ordered not to be moved; and a severe blister applied over the seat of the injury. After the second blister was healed there were marked signs of improvement. A third blister was well by the 12th

of December, and the horse led out of his stall, without showing any symptoms of the lesion. He remains sound on his leg, and does his work, apparently, as well as ever.

SPECIMENS FOR THE MUSEUM OF THE AMERICAN VETERINARY COLLEGE.

BY JOHN C. MYERS, JR., D.V.S.

ARTHRITIS OF THE ELBOW JOINT.

This specimen of the elbow joint was removed from a stallion eight years old, called Membrino Priam, that stood at Morning View, Ky., for breeding purposes. On the 2d of April, 1875, he received a kick upon the elbow joint from a stable companion, inflicting, as the specimen proves, a serious injury.

I will briefly narrate the symptoms as I observed them on the two occasions that I visited him. I at first noticed a large swelling over the lower third of the humerus and the upper region of the radius, with a lacerated wound at the junction of the two bones. He was almost unable to move from the spot, and when forced, he would throw himself upon his hind extremities, carrying the injured limb in a flexed pendulous manner. At long intervals he would put his toe to the ground. No crepitation could be discovered, and disregarding the swelling, there was no deformity. He bore a very anxious expression. His breathing was quite rapid and his appetite impaired. I made a second visit on the 15th of May, by which time the acute symptoms had subsided. His movement was but a trifle better. The swelling was reduced considerably, but what remained felt rather hard and was limited to the upper extremity of the radius. On this visit I removed the slings and discarded the fomentations that had been applied to the seat of injury, and applied a blister over the enlargement, which was repeated about every two weeks for four successive times. Under this treatment he gradually improved, and became quite

serviceable in the stud again, although not entirely convalescent, as the lameness and enlargement were quite perceptible.

Two years later he met with a mysterious accident that caused a rupture of the stomach, on which account I was called to make a post mortem examination, when I captured this specimen.

INTESTINAL CALCULUS.

BY THE SAME.

The intestinal calculus is one of a half peck that I removed from the pelvic curvature of the large colon, of a horse that suffered with colitis for four days, caused by these calculi obstructing the colon.

FRACTURE AT THE COXO FEMORAL JOINT.

BY THE SAME.

The animal from which this specimen came was a fashionably bred colt, one and a half years old, which I visited on the 9th day of August, 1877, six weeks after he met with an unaccountable accident, that fractured the neck of the femur. There was a painful swelling over the coxo-femoral joint and its vicinity, with extreme lameness, characterized by an inability to propel his leg and a dread to put his foot to the ground. He frequently flexed his limb and held it in that position for several minutes, then he would put the foot to the ground upon the toe, about four inches in advance of the opposite foot. When urged to go rapidly, he would carry the limb in the air in a vertical manner. By the 12th of October, an abscess had formed below the external angle of the ilium, which I evacuated, and found it emerging from the region of the joint. February 4th, 1878, I obtained the owner's consent to destroy him. On my arrival I found him but little better in his movement. His gluteal and crural muscles were very much atrophied. I destroyed him by injecting a strong solution of cyanide of potash into the jugular vein, which killed him

instantly. I removed the hip with the femur, and stripped off their integument and muscle, when I discovered a large mass of fibrous tissue, from one to two inches in thickness at various points, under which I found a remarkable-sized calcareous tumor of a friable nature. Owing to this property it greatly reduced in size during the cleaning and drying process; however, the pathological lesions are extensive enough to make the specimen interesting.

I tried to induce the owner to destroy the colt on my first visit. This he was unwilling to do, without making some effort to restore his action. I did not revisit him until I was requested to repair to the farm, a distance of twenty miles, and examine the nature of the swelling that formed along the ilium, which proved to be an abscess. After having evacuated the same, the owner regained his confidence, and permitted the animal to live until February 4th, 1878.

NOTES ON THE MILITARY VETERINARY SERVICE IN ITALY.

FURNISHED BY THE LIEUTENANT COLONEL, INSPECTOR OF THE
VETERINARY CORPS.

Before 1821, the army of Piedmont had no appointed veterinarians. For the succeeding 24 years the only attending military veterinary surgeons were appointed for the time-being, as needed, and ranked with the officers of the lowest grade.

Towards 1848 veterinarians were ranked as officers, and received the uniform of cavalry officers and small salaries. In 1850 they were lowered in their position, as in 1821 and following years.

In 1858 the position of Chief Veterinary Surgeon, appointed from the professors in civil practice, was created. He received the title of Adjunct Inspector to the Superior Military Sanitary Council.

In July, 1861, the veterinary personnel was reorganized as an effective corps, and the Inspector ranked as major. The service

was then reorganized by the appointment of seven Chief Veterinary Surgeons, with the rank and pay of captains.

In 1871 the Chief Inspector was selected from among the army veterinarians.

With the reforms due to General Ricolti, in 1873, the Chief Inspector was raised to the rank of lieutenant colonel, the Veterinary Chiefs to those of majors and captains.

In 1877 the number of Veterinary Surgeons ranking as captains was increased.

The organization to-day is as follows: One Veterinary Lieutenant Colonel Inspector, attached to the Minister of War; seven Veterinary Majors, attached to the seven corps d'armée; three Veterinary Captains, attached to special corps d'armée; to each regiment of artillery forming the corps d'artillerie, one Captain, two Lieutenants and two Sub-Lieutenants; one Lieutenant each for the two regiments of the engineer corps; one Captain and two Lieutenants to the Military School of Piperole; one Captain to the School at Moden, one to that at Turino, and one Lieutenant to that at Caghari; three Captains and three Lieutenants for the breeding establishments, or remontes. To resume, there are—

1 Lieutenant Colonel,	with a salary of 5,600 francs.
7 Majors,	- - - " " 4,000 "
39 Captains,	- - - " " 2,800 "
59 Lieutenants,	- - - " " 2,000 "
39 Sub-Lieutenants,	- - - " " 1,800 "

ARMY VETERINARIANS.

LETTER FROM THE ADJUTANT GENERAL.

Washington, January 3, 1880.

DR. A. LIAUTARD,

Amer. Vet. College, N. Y. City.

SIR.—In reply to your letter dated Dec. 22, 1879, I have to inform you that each regiment of cavalry in the service of the United States is allowed one veterinary surgeon, at a salary of

\$75. per month, and the 7th, 8th, 9th and 10th regiments are each allowed one additional veterinary surgeon at a salary of \$100. per month.

A veterinary surgeon of a regiment is appointed only upon the favorable report of a Regimental Examining Board and the recommendation of regimental commander. An application for appointment to that grade should therefore be addressed to the commanding officer of the regiment in which the appointment is desired.

There are vacancies in the following enumerated regiments.

1st Cavalry, Fort Walla Walla, Washington Ty.

3d " " Laramie, Wyoming Ty.

6th " " Lowry, Arizona Ty.

8th " " Ringgold, Rio Grande City, Texas.

Very respectfully,

Your obedient servant,

C. BUSCH,

Assistant Adjutant General.

BIBLIOGRAPHY.

LA TRICHINE ET LA TRICHINOSE.

BY ED. DELE.

This is the title of an excellent little pamphlet which has been recently published and written by Mr. Dele, Veterinary Surgeon of Anvers. It is one of the most complete documents on the subject, and will prove of great interest to those who will read it.

Beginning at the history of the disease and passing in review the epochs of its appearance in the different parts of the globe, this is followed by the second chapter, which treats of the anatomy and physiology of the trichina itself, its periods of development, mode of living, &c. Further on we are told of the vital resistance of this parasite and of the different means by which it

can be destroyed. In the following chapter the symptomology of trichinosis in man and animals are comparatively given and extensively treated, followed by the hygienic measures to be recommended as prophylactic and to be applied in Belgium.

In conclusion Mr. Dele says: trichinosis is a disease often painful, sometimes fatal, produced in man by the use of raw swine meat containing trichina.

In different European countries trichina have been found in salted or smoked pork of American import. In Germany these nematoids have been found in fresh as well as in preserved meat.

To overcome the effects likely to follow the use of the meat suspected of being trichinized, there is indication for those coming from the United States of America: 1st. to stop entirely the introduction of sausages into Belgium; 2d. to have microscopical examinations of all other meat of pork imported, and perhaps to mark that recognized as free from trichina; 3d. to transform that recognized to be infected; 4th. to vulgarize the fact of the entire innocuousness of the trichinized meat when *sufficiently cooked*.

These are the means by which one may avoid being *eaten by worms*, as Zundel said in 1864, or else to abjure one's religion and to become Jew, as proposed by the *Chicago Tribune*.

HAND-BOOK OF VETERINARY OPERATIVE SURGERY.

BY M. EDWARD v. HERING.

(*Third Revised Edition.*)

This revised edition is written in the German language; it is the latest and most complete illustrated operative surgery at our command. Practitioners as well as students will find it a most excellent guide to familiarize themselves with the technicalities of modern surgery, especially since it is edited by one of the most ardent and eminent veterinary authors. Reflecting upon his official position at the Royal Veterinary Institute, and his connec-

tion with the numerous scientific bodies throughout Europe, we can readily realize the perfection of his practical ability and theoretical knowledge; the essence of which he has liberally imparted to this book, with the sole motive of promoting veterinary science.

The first part of the introductory chapter dwells upon diagnosis, prognosis, dexterity, technicality, methods, effects, time, constitution, season, weather, character of disease, preparatory measures, assistants, instruments, appliances and after treatment.

In the second chapter, the means of restraint are elaborately discussed and creditably portrayed. Here attention is directed to the use of anæsthetics, one of the most important steps toward the advancement of veterinary science.

The operative portion is arranged in two divisions: The first into operations which can be performed on various parts of the body, having either a local or general action, such as phlebotomy, means of arresting hemorrhage, transfusion, inoculation, sutures, electricity, abscesses, open joints, polipy, excrescences, transplantation, removal of foreign bodies, cautery, &c.; the second division treats of operations which can only be performed on special parts of the body, to remedy evils in that particular region. This class is divided into six divisions, according to their relative locality: 1st, head; 2d, neck; 3d, abdomen and thorax; 4th, anus and tail; 5th, reproductory and urinary organs; 6th, extremities.

This is the third edition on operative surgery Prof. v. Hering has furnished the profession. It contains 335 large pages of matter, and embraces all modern principles and practice of veterinary surgery adopted by himself, as well as other distinguished veterinarians, whom he freely cites.

There exists translations of this work into the Russian and Italian languages; and undoubtedly its translation into the English language would be highly appreciated by our colleagues, and we are sure the venerable author would cheerfully grant the privilege, and assist any individual who would undertake the task. The merits of the manual are greatly enhanced by the 204 wood cuts and the 12 finely executed lithographic illustrations it contains, thereby presenting the subject it treats upon in a very explicit manner.

(J. C. M.)

LAMINITIS.

We have seen the proof of a little monogram by Prof. A. A. Holcombe, on this diseased process of the horse's foot, treating of the whole subject so far as Nomenclature, Ætiology, Symptoms, Lesions, Complications, Treatment, &c. The whole is included in about 35 pages of interesting matter, illustrated by wood cuts, presented to the United States Veterinary Medical Association in competition for prize, but which, in the estimation of the committee, failed to reach the desired standard. "Laminitis" will prove of interest to those who pay special attention to diseases of the feet. The work, which is just out of the printers' hands, can be had from the author, as will be seen by the notice given in our advertising pages. More about it hereafter.

NOTES AND NEWS.

VETERINARY BOARD OF HEALTH.

The *Observador Medico* is authority for the statement that an endeavor is now being made in Mexico to establish a Veterinary Board of Health. At the same time it is desired that a law be passed compelling owners and those having charge of animals to report to the Board any enzootic or epizootic disease which may make its appearance. It then will become the duty of the proposed Board to send a Commission of Veterinary Surgeons to investigate the disease, and employ such measures as may be necessary to prevent a further spreading of the disorder. The power to be granted such Commissions would seem to be comprehensive enough to accomplish the desired end; for, not only are the common measures of restriction to be enforced, but also the prohibition of the sale of meat, milk, hides or other parts of the diseased animals.

RECOGNITION OF THE PROFESSION.

The *Medical and Surgical Reporter* says in the issue of Jan. 17th, 1880, under the head of Personal: A marble statue to Bourgelat, founder of the Veterinary School of Paris, was unveiled in that city Oct. 30th, 1879. When will veterinary science receive like recognition in this country?

REVOLT AMONGST THE STUDENTS AT ALFORT.

Under the futile pretext of some re-enforcements in the general discipline to which students are submitted by ministerial regulations in the French veterinary schools, two hundred students of Alfort, on the night of the 29th of November, 1879, revolted. Everything which belongs to such acts amongst students was carried out; breaking of windows, of brooms, &c., a great deal of noise, followed with a forced day of vacation, by the trespassing of the wall or gates in process of construction. The result was a ministerial visit, an inquiry into the cause of the difficulty, and the temporary discharge of two hundred members of the four classes. After further consideration, they were authorized to re-enter the school on the 22d of December, with the exception of twelve of the leaders, to whom the doors of the veterinary profession in France are closed.

INTERNATIONAL VETERINARY CONGRESS IN 1880.

At the meeting of the Veterinary Society of Liege, held Oct. 28th, Mr. Eraers, Veterinary Surgeon, offered a resolution for the organization of an International Veterinary Congress, to be held in Belgium during the festivities which will take place on the occasion of the fiftieth anniversary of independence of that country.

CIRCULAR.

TESTIMONIAL TO MAJOR GENERAL SIR FREDERICK FITZWYGRAM, BART.

DEAR SIR:—At a meeting held in Red Lion Square, London, on the 1st of July, 1879, it was unanimously resolved that a Testimonial should be presented to Major General Sir Frederick Fitzwygram, Bart., in recognition of the great interest he has taken in the advancement of the profession and the very able manner with which he carried out the duties of President of the Royal College of Veterinary Surgeons during the three years he held that office. It may be correctly affirmed that he spared neither time, trouble nor expense in advancing the position of our calling and in effecting a reconciliation between conflicting interests in the profession. Besides which, he has offered inducements far greater than any previously existing, to encourage students to pursue their studies and to become more thoroughly efficient in every branch of their education.

It is proposed that the Testimonial should take the form of a Portrait to be presented to Sir Frederick by a united profession as a token of the respect and high esteem in which he is held, and that a duplicate portrait be hung in the college. The presumed cost will be from 300 to 400 guineas, and to raise this amount the subscriptions will be unlimited. The following gentlemen have consented to form the Executive Committee, and in their names I solicit your interest in this proposal and request that you will kindly forward your subscription to the treasurer, Henry Joseph Cartwright, Veterinary Surgeon, Wolverhampton.

I beg to remain, Dear Sir,

Yours very truly,

Knott Mill,
Manchester.

THOMAS GREAVES,
Hon. Sec.

THE EXECUTIVE COMMITTEE.

CHAIRMAN.

JAMES BEART SIMONDS,

Principal and Professor, Royal Veterinary College, London.

TREASURER.

HENRY JOSEPH CARTWRIGHT, Esq.,

Vice President of Council, Wolverhampton.

HONORARY SECRETARY.

THOMAS GREAVES, Esq.,

Member of Council, Manchester.

WILLIAM WILLIAMS, President of the Royal College of Veterinary Surgeons, Principal and Professor, New Veterinary College, Edinburgh.

JAMES MCCALL, Principal and Professor, Veterinary College, Glasgow.

THOMAS WALTON MAYER, Professor, Agricultural College, Cirencester.

D. McEACHRAN, Principal and Professor, Veterinary College, Montreal.

And many other members of the profession.

EXCHANGES, ETC., RECEIVED.

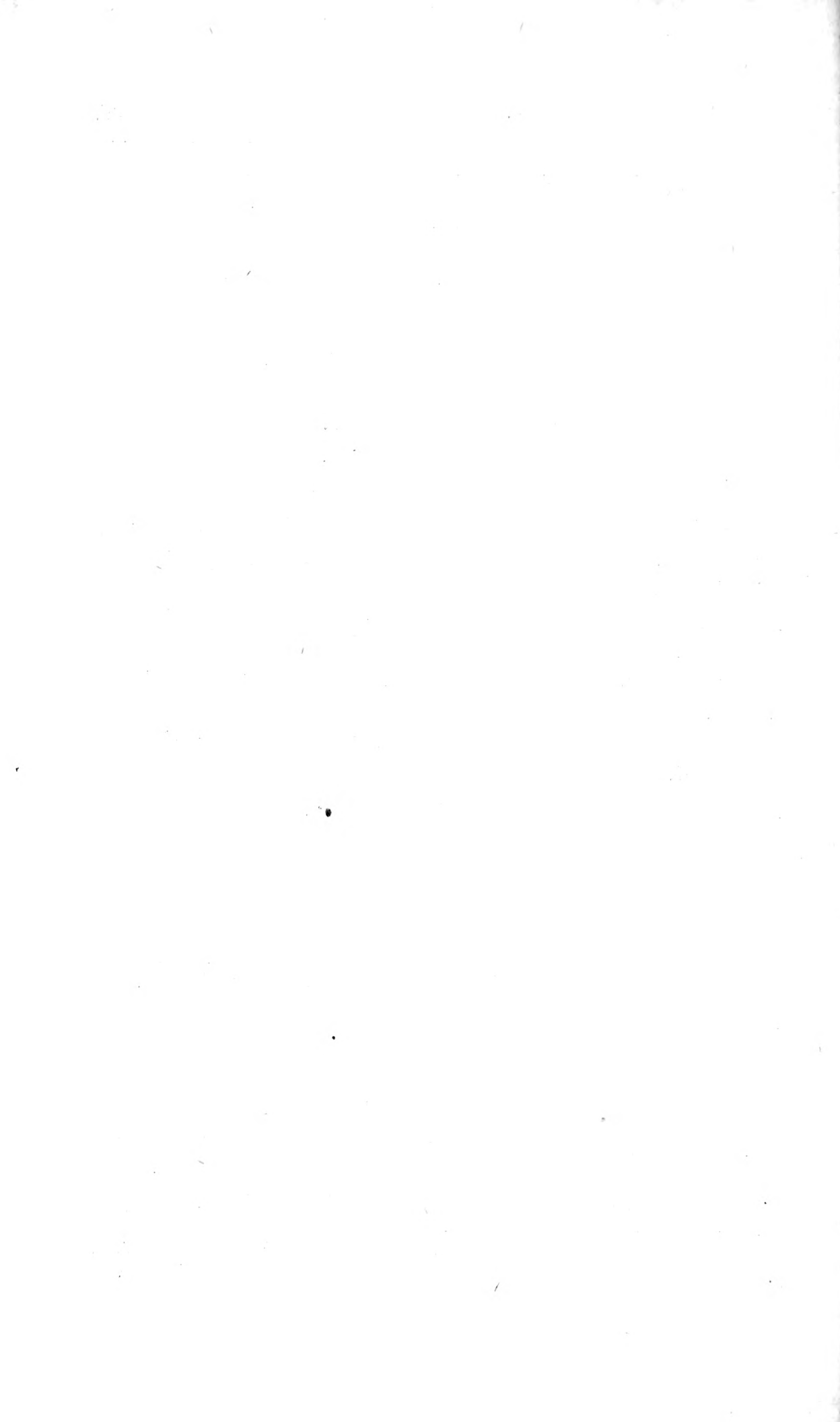
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CORRESPONDENCE.—N. H. Paaren, M.D., V.S.; J. C. Myers, Sr., D.V.S.; W. Gadsden, M.R.C.V.S.; J. C. Myers, Jr., D.V.S.; D. C. McEachran, F.R.C.V.S.



AMERICAN VETERINARY REVIEW,

MARCH, 1880.

ORIGINAL ARTICLES.

RUPTURE OF THE PERINÆUM IN PARTURITION.

In his most complete work on obstetrics, Fleming remarks that not a single case of rupture of the perinæum has been recorded in the English language. According to the testimony of several reliable witnesses, the accident is not of infrequent occurrence in the breeding districts of the west, where such mares receive the soubriquet of "gil-flirted." I report for the *Review*, herewith, the only case I have ever seen in the mare, trusting it will stimulate others, who have had greater obstetrical experience than myself, to report any cases which they may have had.

In May, 1873, I was called to attend a large bay farm-mare in parturition with her third foal, the messenger reporting that the head and neck of the foetus were protruding from the anus, while the fore-legs were hanging from the vulva. Owing to the violent efforts of the animal to rid herself of the obstruction, one of the attendants became alarmed for the safety of the foetus, and cut the perinæum across with his pocket-knife, allowing the foal to be delivered at once. On my arrival, I found the foal at

the teat sucking, and the mother quite easy, only occasionally switching the tail and showing other slight signs of after-pains.

From the perinæum and vulva a small quantity of bloody fluid was discharged, with an occasional escape of afflatus. On inquiry, I learned from the attendant, who had assisted in many cases of parturition, that the foal made not only an anterior presentation, but was also in the vertebro-sacral position without any cause for dystocia. The feet had presented through the vulva, but the head had remained in the vaginal canal, where an examination revealed the nose caught in the mucous membrane just within the superior commissure. Before the attendant had time to push the foetus forward and release the nose, the mare made a powerful effort at expulsion, which sent the head through the vaginal walls, and a moment after it presented from the anus, having also ruptured the coats of the rectum.

A careful examination of the uterus was made and the foetal membranes removed, after which attention was given the wound. The laceration in the rectum extended forward on the median line, a distance of about five inches, the borders of the wound being quite regular in outline. An attempt was made to close the wound in the intestine, with the glover's suture, but it was not entirely successful, for on nearing the sphincter and it was found impossible to use the needles, owing to the contraction of the tissues. The suture was made fast, the parts dressed with carbolic acid and glycerine, and two sutures introduced into the perinæum. She was placed upon a few ten-drop doses of aconite for a day or two, ordered to receive enemata three times a day, and laxative, easily digested food, with occasional antiseptic injections into the vagina. The wound in the perinæum soon healed, but the torn rectum suppurated some near the anus, and during the few weeks she was under my observations, a fistula continued to exist, between the rectum and vagina, through which partly fluid faeces would sometimes pass, to be voided from the vulva; this presence of fecal matter in the vagina served to maintain a little catarrh of the mucous membrane, accompanied by frequent straining and attempts at micturition. Otherwise, the mare soon regained her usual health, and, after a short period, resumed her

work, when I lost sight of her. The interesting point I did not determine was, as to whether the fistula became permanent.

RUPTURE OF THE VAGINA.

Except during parturition, traumatic lesions of the vagina seem to be exceedingly rare, owing, no doubt, to the protection which this organ receives from the pelvic walls. I have had the fortune to see in my practice, two cases of rupture of the vagina, occurring during copulation. Both subjects were medium-sized farm-mares, weighing about 1050 pounds, seven or eight years old and in good condition; one was a primipara and the other had raised one foal. The same stallion, a very nervous, excitable and vigorous animal, weighing 1300 pounds, had covered both mares in the early part of the season, while he was yet very amorous and somewhat violent in his actions.

The one to which I was first called had the following history: Had given birth to a foal about two years before without injury to the genital passages; six days before my visit she had been covered, and immediately afterward strained and passed a little blood mixed with the vaginal secretions. At occasional periods for the next few hours, small quantities of blood were passed and micturition was quite frequent; from the second day to the time of my visit the discharges were muco-purulent and of but moderate quantity, the animal being very uneasy, off her feed, with occasional colicky pains and constipation complete.

When I first saw her, she showed symptoms of impaction, with now and then a little straining, accompanied with the passage of a small quantity of secretion from the vulva. Emptying the rectum of a large quantity of hardened dry fæces, a vaginal examination was made, revealing on the superior wall of this organ, near the cul-de-sac of Douglas, a granulating wound about two inches in diameter. A finger was readily passed into the wound, and complete adhesions found between the walls of the vagina and the connective tissue of the neighboring parts, so that

the peritoneal sac was not open; the thickening of the tissues could readily be detected through the walls of the rectum. For treatment, a dose of cathartic medicine was given, which relieved the constipation, followed by small doses of aconite and local injections of the vagina with a weak solution of carbolic acid. Within ten days' time cicatrization was completed, and the mare returned to her work.

About two weeks later, I was called to the second case. She had been covered three days before, but no hæmorrhage followed the intercourse, and there had been but little discharge from the vulva, although straining was quite frequent during the first two days. At the time of my visit the patient was suffering from acute diffuse traumatic peritonitis. On making a vaginal examination, a wound, somewhat irregular in outline, was found in the same situation as in the other case, with the exception that it was a little farther forward. In exploring it the hand passed directly into the peritoneal cavity, while the tissues surrounding the wound were inflamed and somewhat swollen. The wound in the vagina was not, within itself, in this case, any more serious than in the previous one, nor should it generally be attended with more unfavorable results than the surgical wound made in the same locality when castrating the mare; but owing to the contusions of the tissues and the supervening peritonitis the patient rapidly succumbed and died four days after receiving the injury.

From the paucity of cases reported in English veterinary literature, this injury to the vagina must be exceedingly rare in English speaking countries, yet it presents many points of interest. In the two mares in question, the vagina was of the usual length, and the tissues apparently had not undergone degenerative changes that would either render them less capable of distension or more easy of rupture.

The disproportion in size between the male and females was by no means so great as is often seen, nor could I determine that the male organ of copulation was of an unusual length. The question, why did rupture of the vagina take place in these cases? is one I cannot answer.

The male was reported as excessively violent in his copulative

movements, but so are many stallions at the commencement of the season, and yet they do not injure the female. Again, when we consider the shape of the glans penis, the great elasticity of the vaginal walls, and their constant lubrication with mucous, it seems scarcely possible that this accident should occur. On the other hand, during the period of œstrum, some mares have a highly congested condition of the generative organs, accompanied by more or less dryness of the mucous membranes of the vulva and vagina, which would render the copulative movements less easy than in other instances. This, then, might be a predisposing cause of rupture, but I do not know that the condition was present in either case which I have seen. Lastly, is to be considered the effects of injecting the spermatic fluid into the peritoneal cavity. That this would be sufficient of itself to cause peritonitis is not probable, for being composed of mucous fluid, but slightly alkaline, like the peritoneal fluid, it could scarcely prove sufficiently irritating to set up inflammation. The peritonitis, then, must be considered as one of the results of the laceration and contusion of the peritoneum and adjacent tissues, combined with the entrance of atmospheric air into the peritoneal sac.

Regarding the treatment in these cases, if called early, the wound in the vaginal walls, where its nature will permit, should be closed by the glover's suture and healing by the first intention secured if possible. Suturing in this locality is by no means easy, and where it cannot be accomplished the vulva should be covered with a thick pad and bandage, to prevent the entrance of air when the animal strains or micturates. Local applications, when necessary, should be made with a sponge, as injections may enter the abdominal cavity. Constitutional symptoms, if any are presented, should be combatted with the usual remedies, constipation prevented and appropriate diet furnished. The complications are the principal source of danger, and their appearance will give special indications for treatment.

DILATATION OF THE ŒSOPHAGUS (JABOT) IN A COW.

BY C. B. MICHENER, D.V.S.

The subject, a cow four years old, was noticed to be choked on pumpkins last fall, at which time, the owner tells me, she became very much distressed, was enormously tympanitic, but after a time became easier and obtained relief. About one month later she was again choked, though this time with corn on the cob. She got over this, but in a day or two the owner noticed that when she ate any hay or corn fodder, she would swallow but two or three mouthfuls before retching would set in. This would be kept up, accompanied by low moaning, until she succeeded in vomiting all the solid food she had swallowed. If permitted, she would repeat the same performance, seeming to be desirous to eat. After being treated by a local "horse doctor" for some time for "weak stomach," I was called to see her on the 18th of December, '79.

Was told that the cow could ingest liquid or semi-liquid food without any inconvenience, but the least particle of solid food, as hay or straw, would induce the above symptoms. I fed her some hay and noted the effects carefully, as well as the condition of the food she vomited. With these observations, and the history of the case, I had no trouble in diagnosing a thoracic dilatation of the œsophagus. Advised the owner to sedulously avoid giving the animal anything but liquid food or mashes. One night, however, the cow got at some wheat straw and ate of it. The dilatation became filled and she was unable to eject its contents. The post-mortem revealed the presence of a sac (the muscular coat of the œsophagus being ruptured allowed the mucous, or internal coat, to escape through the hernia and thus form a pouch), about three inches above the stomach. The other organs of the body were reported healthy.

INTESTINAL INCARCERATION CAUSED BY HEPATIC ADHESIONS.

BY JOHN C. MEYER, JR., D.V.S.

The following is an abstract taken from my note-book, of a post-mortem report, which is probably worth describing, as the anomalia found in the liver of the subject is, no doubt, exceedingly rare.

On the 9th of last October, I was requested to visit a bay carriage gelding, aged 10 years, that had been suffering with colic pains during the foregoing night. On reaching the place, about four miles distant, I found the animal dead in the orchard. Upon my suggestion the owner authorized me to make an autopsy, which resulted in discovering a strangulation of a large portion of the small intestines, in a very peculiar manner. The precursory cause of this constriction was the existence of an abnormal orifice, formed by bands of adhesion, extending from the superior border of the right lobe of the liver, in a vertical direction, to the dorsal vertebræ, attaching themselves at two different points, about two inches apart, creating an oval aperture three inches in length. The liver itself also entered into the constriction of the opening, by being deeply notched between the adhesions. This notch had been unquestionably increasing in the course of time, owing to the constant traction produced by the weight of the liver, it being suspended from the spine by the bands of adhesion. The ring was remarkably strengthened by a fibrous band encircling its inner border, which was very tenacious and served in retaining the orifice firmly open. Through this orifice about ten feet of the small intestines had slipped, where they became incarcerated by being hung upon the lower end of the ring (this phenomena may be illustrated by hanging a portion of intestines upon a hook), while the remainder of the small intestines were behind the liver, supported by their mesenteric attachments, consequently suffering no

strangulation. The constricted portion of the bowels presented a dark bluish color, considerably swollen and studded with drops of serum on its external coat. The balance of the alimentary canal and other visceral organs were in a healthy condition. The abdominal cavity contained a small quantity of bloody serum. This horse always enjoyed perfect health and carried a full supply of adipose tissue.

TRANSLATIONS FROM FOREIGN PAPERS.

GOURME; OR, HORSE VARIOLA.

NATURAL AND IRREGULAR FORMS OF THIS DISEASE—INOCULATION AS
A PROPHYLACTIC MEANS OF ITS COMPLICATIONS.

BY M. L. TRASBOT.*

(Continued from page 445.)

VI.

One of the most common complications of equine variola is the exaggerated inflammation of the pustules, soon followed by lymphangitis and suppurative adenitis. It is often observed at the extremity of the head, upon the lips, and in the nasal cavities; it is also frequent on the extremities; it is very seldom seen, on the contrary, round the genital organs. It seems always missing, or at least it has not yet been recorded, upon any other part of the body.

When this epi-phenomena takes place, the pustules become larger, are surrounded sometimes with large swellings, and in their centre become suppurative, and at a given time have a superficial resemblance to glanderous chancre. If they exist in

* Translated by A. Liautard, M.D., V.S.

the nasal cavities, being accompanied with an intense inflammation of the pituitary membrane, with abundant suppuration at its surface and tumefaction of the maxillary ganglions, their presence may easily induce an error and the case be mistaken for one of acute glanders.

Upon the skin of the lips and the wings of the nostrils the pustules of gourme may also, and easier too, suppurate, be hollowed in the centre, increase in size, become half a centimeter in width and in depth, and also for several days resemble exactly farcinous ulcers.

This resemblance is then also increased by the simultaneous development of lymphangitis, showing sinuous cords, more or less bosselated, between these excavated and suppurating surfaces and the surrounding ganglions, which become also the seat of an inflammatory swelling more or less painful.

After a few days the lymphangitis suppurates and opens here and there upon the most prominent points, so as to resemble a series of true chancres. We must acknowledge all this looks much like farcy, and can be readily mistaken for the manifestations of glanderous diathesis. It is not possible now to doubt that all the cases of flying farcy of the face, so readily and easily cured, were but examples of mistaken horse-pox. Even to-day similar errors may be made, though the attention of practitioners has been called to these facts.

The deception is as great when the eruption, concentrated upon one leg, is also accompanied with suppuration of the pustules, with lymphangitis and consecutive adenitis. It is true that the formation of an abscess in a ganglion, soon following, decides the question. Still this is not an absolutely characteristic sign; for it may take place in *very exceptional* cases of acute glanders, and on the other hand, it may be missing in true gourme. The presence or absence of this abscess does not constitute a positive sign in one case or in the other.

I had occasion to watch, upon a four-year-old, a similar fact, which puzzled me much. Following a pustular eruption on the left hind leg, this horse had ulcerous sores on the canon and an indurated lymphangitis running on the internal face of the leg

as far as the inguinal ganglions, which became indurated and remained in that condition for some time without suppurating. Several times I believed myself in the necessity of condemning him. Two reasons stopped me: first, the pns given by the pseudo chancres was of *good nature*; and second, the animal gave me a rare opportunity to gather a long and very interesting observation upon the primitive development of glanders. I had the certainty, as perfect as possible, that he had never been in contact with a glandered horse. After four weeks of quarantine in a box-stall, where he remained without treatment, all his wounds had cicatrized. But he had lost much flesh, his hairs were dull and dry, and there remained quite a large swelling of the leg, an indurated cord at the internal face, up to the thigh—even a small inguinal gland and a lameness, which, after having been well marked at the time of eruption, had diminished, but yet existed without improvement. I became more than ever inclined to look at him as a case of spontaneous glanders.

Even then he was not destroyed. He was sent to a farm, turned out daily, ate grass at discretion, and received oats every day. Under the influence of this regime he recovered entirely and was soon able to resume his work.

What had taken place? I believe I begin to know it. I did not think, of course, any more about spontaneous development of glanders. After careful consideration, I believe that he had had, following the eruption of gourme, an adhesive lymphangitis, like a phlebitis of the same kind. By the formation of an adherent clot in one of the large lymphatics, the resorption of the lymph had stopped, or at least diminished in the whole leg, causing then a swelling and a sensibility, perhaps only from mechanical interference. Then, by degrees, surrounding small vessels had sufficiently dilated, the resorption had again started, as in the normal state, and the swelling had disappeared, leaving only the indurated lymphatic cord, rounded, somewhat smaller, and well defined under the skin. This, like those remaining after adhesive closing of a vein, was longer in being absorbed. Six months later it was still felt under the skin. Still, the animal had resumed his work and was in excellent health. Eight months later everything had disappeared.

Close study of the above case brought me to the firm belief that such had been the nature and progress of the phenomena described. But to be materially satisfied, dissections of an adhesive lymphangitis were necessary.

This anatomical demonstration I soon obtained. A five-year-old, in poor condition, which I was told had gourme about a month before, and presented a large swelling of the left anterior leg, which had broken with several abscesses, died in our hospital of a suppurative pneumonia of the left lung. I dissected his leg and found in the middle of the œdema, at the internal face of the forearm, a hard cord of the size of a pencil, being a lymphatic obliterated by an adherent clot, filling it from a point near the knee to the axillary ganglions. These ganglions were also the seat of serous infiltration.

In all probability this horse had had a complicated variola. What would have become of this external swelling if he had lived? Undoubtedly, as in the first horse, everything would, by degrees, have disappeared. Still, it proved the correctness of my previous interpretation.

What can be thought now of those pseudo cases of benignant farcy spoken of even in our day?

Horse pox, disguised by the inflammation of the pustules and of the surrounding lymphatic vessels, may and must be sometimes mistaken for a manifestation of glanders.

The possibility of similar errors needs no proving: it has been done by Dard and M. Henry Bouley.

All the complications—pseudo chancres of the pituitary membrane, of the lips, of the wings of the nostrils, of the skin of the legs; suppurative lymphangitis, with appearance of ulceration upon the track of the inflamed vessel; adenitis, with or without suppuration, are absolutely without danger by themselves, notwithstanding their bad aspect. In many circumstances even they do not interfere with the progress of the disease of which they are today one of the forms of resolution. The only exception to make is the adhesive lymphangitis, which by itself constitutes a complication somewhat serious, on account of the length of time necessary for its disappearance.

In general, these lymphangitises do not endanger life. If they do, it is because they are mistaken for glanders. How often this must have been the case!

It is then very important to vigorously make the diagnosis, as from it is the question settled—treatment or destruction of the patient.

Dard, in 1840, in his paper on pemphigoid rhinitis, and M. H. Bouley, in 1843, first in his article on herpes phlyctenoides, and afterwards in the one on horse pox, have given the differential characters of the false chancres and gourme lymphangitis from the true manifestations of glanders. I have nothing to add to those excellent works; I will simply repeat after him that the pathognomonic characters of the two affections are specially obtained from the quality of the pus, the aspect of the sores, and principally from their progress.

The pus of gourme is always white, thick, creamy and of good nature, while that of acute glanders and farcy, the only external forms analogous with it, is thin, yellowish, oily, or striated with blood, and of muddy urine color.

The sores of gourme, although hollowed, are always surrounded and lined at their bottom with granulations, slightly projecting outwards, somewhat firm and of brilliant color, and very different from true chancres, whose borders are prominent, soft, pliable, of bluish red color, with their bottom covered with a pultaceous mass, greyish or bloody, then assuming a red livid color.

And again, if one waits a little, he sees the sores of gourme soon cicatrized, while the true chancres do not. These increase in size, and become deeper a long time before the work of reparation sets in.

Still, all this remains yet vague, and requires, to be well appreciated, a certain practical tact and much experience. It is doubtful if it could be affirmed even then that the most expert practitioner would hesitate to give his opinion at once.

There is an experimental test which, in such circumstances, may help him—that is, inoculation. It cannot be practised on the horse, for first, one would fear to communicate glanders to a

healthy subject; and again, even if it was gourme, similar accidents may follow the experiment, which would leave the observer in the same hesitation. For these reasons equine subjects cannot be used for this experiment.

Upon a bovine subject it presents the double advantage of being harmless, and to be so positively demonstrative that no doubt can remain.

Bovines not being apt to become glandered—at least by the simple insertion of virus made with the lancet, if the liquid which is inoculated is of glanderous nature, the result will certainly be negative. With the variolic liquid, on the contrary, taken upon a recent eruption, vaccinal pustules will always be developed, providing the animal has been virgin of the disease, and those pustules cannot be to-day confounded with any other cutaneous disease. If, then, a positive result is obtained, no matter how bad the sore may have looked, or how bad the character of the supuration, one will have the complete proof that the affection is simple, and will get well by the efforts of nature alone.

The inoculation of a bovine is an easy means here, economical and harmless for the subject of experiment, consequently essentially practical to decide with certainty the differential diagnosis between horse-pox and glanders. I believe, that in this point of view, it is called to render assistance in some cases.

And now, how do the complications above described take place? The fundamental condition of their production is evidently the pyrogenic aptitude so fully developed in the equine organism. Under this condition he holds the first rank. All his tissues become irritated and suppurate with such facility that the simple puncture of a lancet scarcely closes up by first intention. Still the physiological quality is not equally marked in all subjects. There are notable differences between the animals of high breed, with fine and elegant construction, whose temperament is nervous or sanguine; and those with heavy and thick form, whose disposition is lymphatic. In these last the formation of pus is in all similar circumstances much more abundant and developed than in the others. And then we see in them the suppurative lymphangitis of gourme, which is more common and more

serious. Every practitioner has observed the truth of this fact.

The predisposition of the organism of the horse, always marked, is still increased when under the influence of variola. This is so well proven that gourme has been called *specific pyogenia*.

But this manifest predisposition, against which, however, nothing can be done, is not by itself sufficient to produce in a trice all the varied phenomena above considered; it must, besides, be assisted and stimulated, so to speak, by an external occasional influence. In other words, these same phenomena might exhibit themselves on all parts of the body, which is not the case. They never begin in any other place except the inferior extremity of the head and legs, that is on parts exposed to friction or external violence. Here the food, the bridle, the halter, which, rubbing and tearing the summit of the pustules formed in the nasal cavities, on the wings of the nostrils, the commissure of the lips, the cheeks, etc., produce these accidents; then the bedding, the blows of the legs against the slats, etc., which causes the same effects; and perhaps we may add the direct irritating effect of the liquids of the bedding which, coming in contact with the skin, unprotected by its epidermis, becomes sufficient cause to increase the inflammation already existing there.

It will consequently be of the greatest importance to take these facts into consideration when deciding where inoculations must be performed, as we have said that there are great probabilities that the eruptions will be greater at this point.

A second complication of equine variola, much more rare, but sometimes more serious, is the formation of deep abscesses in some parts of the economy. It corresponds to what M. Ch. Martin, in his paper "Study on the specific pyogeny called gourme of the horse," has designated as *erratic gourme*, on account of the various regions where these purulent deposits may be found during or towards the end of the disease. He reports fourteen cases collected by him since 1854, which are very interesting.

Abscesses of gourme may indeed be found on every part of the body and in all the lymphatic ganglions, deep or superficial. Under the thick skin of the extremities of the legs they become

cutaneous quitters; if the pus has filtrated into the synovial sheaths, tendinous or articular, it gives rise to tendinous synovitis, and to traumatic arthritis. In muscular interspaces suppuration may become very abundant, weaken the patients, spread extensively, give rise to extensive sloughing and terminate by septic infection.

Round the rectum, abscesses may extend towards the depth of the cavity into the loose cellular tissue and open in the peritoneum, to soon give rise to fatal complications. It is the same for those which are formed in the thickness of the abdominal walls, in the ganglions of the groin or in the testicular cord after castration.

Those developed in the thickness of the walls of the chest and in the prepectoral ganglions may similarly produce pleurisies no less difficult to cure.

M. Ch. Martin cites several similar cases.

He has found these abscesses in the sub-lumbar and the bronchial ganglions. Probably other practitioners have. I have observed several cases myself.

What are the causes of these abscesses, whose consequences are so serious? Such is now the question to solve, as from it will come the indications necessary to follow to prevent them. They all are due to two causes. The first acts in all cases; it is the pyogenic attitude of the horse, upon which I have already treated.

The second varies as whether we consider the subcutaneous and intermuscular abscesses or those of the lymphatic ganglions. For the former it must be a contusion more or less powerful, or some violent external action exercised on the region. It may even be said that by this means, one could produce experimentally at will upon a gourmy horse, similar purulent collections. For the latter, the occasional or determining cause, probably unique, is the absorption by the lymphatic vessels and the accumulation in the ganglions of the phlogogenous products resulting from the pathological exudation from the sores, or perhaps contained in the purulent cavities, or open externally. This a fact which belongs to no special disease. It can take place in all cases where the necessary condition of its development is existing, to wit: the

presence of a pathological liquid at the surface or at the depth of a wound for a certain time.

Purulent, or putrid infection may also result from the same causes, or mechanism, which we have not to consider at present.

These gourmy abscesses, developed at once under the influence of external violence, in a sub-cutaneous part or at a greater depth in the lymphatic ganglions, without being very dangerous by themselves, may have fatal terminations, by the situation they occupy round articular or splanchnic cavities; by the exhaustion that they sometimes produce when the suppuration is very abundant; and also by the general infection of the economy. For these reasons it was important to demonstrate as well as possible their ordinary causes.

(To be Continued.)

EXTRACTS FROM FOREIGN JOURNALS.

GANGRENOUS MAMMITIS IN A COW—SEPTIC INFECTION—ANTI-SEPTIC TREATMENT—RECOVERY.

BY M. GAIGNARD.

A cow, which had given birth to a fine calf, was about a week later found sick. Her right udder was swollen, painful to the touch, and from one of the teats ran a bloody serosity. There was anorexia, increased respiration and febrile pulse. Two days later the symptoms were more serious and more marked, the milk had stopped and rumination had ceased. The maminae was red, hard, swollen and painful, the teats hard and stiff, giving only a reddish serosity and a grumous, thick mass. Notwithstanding the treatment of local applications, scarifications, etc., the disease kept on progressing.

The next day fluctuation was manifest, and on opening, about a quart of thick serosity, of chocolate color, and mixed with thick membranous debris from the galactophore sinuses, was allowed to escape. Gangrene was rapidly involving the whole organ.

Twenty-four hours later the animal was worse, no rumination, sanies characteristic, nose dry and watery, pulse small and thready, respiration deep and grunting, swelling under the abdomen and thorax. Septicæmic poisoning was rapidly advancing.

The case demanded prompt treatment. About twenty little pouches were made in the gangrenous subcutaneous cellular tissue, and several drops of iodurated tincture of iodine, mixed with water—one-fifth—were introduced in each of them. The same operation was to be repeated during the twenty-four hours often enough to use about three ounces of the mixture. The incisions in the udder were injected with phenic solutions, tonic and alcoholic drinks given. The next day nearly the same treatment was pursued. Twenty-four hours after the animal began to feel better; her appetite and rumination had returned, and after a short time she recovered, but not without giving much anxiety about the abscesses and sloughs which followed the injections of iodine. The diseased udder sloughed away after thirty-one days, the processes being accompanied at different times by abundant hemorrhages, which undoubtedly must have interfered with the rapid recovery of the animal.—*Recueil de Médecine Veterinaire*.

EFFECTS OF ESSENCE OF TANACETUM UPON CERTAIN ANIMALS—
PROPHYLACTIC ACTION OF CHLORAL AND CARBONIC ACID
AGAINST ITS RABIFIC MANIFESTATIONS.

BY H. BENJAMIN.

These experiments were made by Dr. H. Peyraud. A rabbit received in the veins of one ear two drops of the essence. Twenty seconds after the animal was thrown into a state of sideration; he jumped forwards, then backwards, and fell into convulsions. The mucous membranes are pale, the ears red and warm, the teeth grind against each other, a bloody saliva flows from the mouth, the urine and fæces escape freely, respiration is accelerated, difficult, and interrupted by a peculiar cry. A stick presented to the

animal is seized and bitten with strength. The animal bites his paws or the ground upon which he lays. This lasts from fifty minutes to an hour, and death from asphyxia would have followed had the dose been larger. These symptoms were followed by a comatose state, which lasted two or three hours, and then the animal recovered his general health.

In another experiment, this time upon a bird, which was placed under a glass globe where a small piece of cotton wet with a few drops of the essence had been placed, the little animal became agitated, vomited, walked on his hocks, stretched his wings, had diarrhœic passages, and convulsions well marked. Chloral and carbonic acid are powerful agents to overcome these convulsions.

A large rabbit received in the pharynx a spray of carbonic acid, then five drops of the essence, (a toxic dose) which was followed by another spray of carbonic gas. The convulsions were not seen.

Another rabbit received under the skin an injection of $2\frac{1}{2}$ grammes of chloral. As soon as asleep, three drops of the essence were injected into the veins of one ear. Nothing is observed. Six minutes afterwards he is killed, without convulsions, by an injection of four drops more of the essence.

Taking the bird which had been thrown into convulsions by the other experiment, he was placed under a globe containing vapors of chloral. The animal sleeps there for a few minutes, wakes up, and falls asleep again.

Again, another bird is placed under a globe filled with vapors of chloral. When asleep, he is placed under another containing vapors of the essence. He dies without convulsions after remaining there for an hour.

Death, says Dr. Peyraud, takes place during the convulsions by the suffocating spasms it produces, a fact which seems to be demonstrated in human rabies.

From these results Dr. Peyraud hopes to have found an antidote for the development of rabies.

The remarks of the Doctor conclude with the relation of a case of a young man who had been bitten by a mad dog, as proved by

the autopsy of the animal made by a veterinarian. Chloral was administered to the man, and no bad results from the bite followed.

Experiments upon dogs and cats ought to have been made, to see if symptoms more similar to those of rabies could be developed and stopped in the same manner.—*Recueil de Medecine Veterinaire*.

INTERNAL CHAMPIGNON.

BY M. L. FELIZET.

Under this name the author speaks of the diseased condition of the spermatic cord, after castration above the superior opening of the inguinal canal.

The symptoms are described as follows: Vertebral column supple to pressure. Locomotion behind slightly difficult. The animal lays down willingly, but his appetite is delicate; his flank is corded; a fistulous tract, rebellious to treatment, remains in the inguinal region, from which flows a yellowish suppuration. Nothing abnormal can be detected by rectal examination, except that it is a little more sensitive to pressure on the diseased side.

The return to work too soon after the operation is considered as the cause of it.

The treatment consists in poultices on the sacro-lumbar region; anodyne rectal injections; opiate and chloral, with oil of hyosciamus, are applied by friction upon the inguinal region; rest. If this fails, throw the animal down; freely open the fistulous tract; introduce the hand, well oiled, into the inguinal canal; take hold of the tumor, and remove it.

Among the cases reported in connection with the subject is that of a five-year-old, which had been castrated, and which was returned to work about ten days after. Consulted three months later, the animal presented the following conditions: Mucous membrane pale; hairs of the mane easily pulled out; head carried low; ears cold and drooping; abdominal legs swollen; a monstrous swelling of the abdomen. The animal was destroyed a

few days after, and at the post mortem an internal champignon, attached to the strings of the right cord, was found in the abdominal cavity, weighing no less than 120 pounds (60 kilogrammes).—*Recueil Medecine Veterinaire*.

INGUINAL HERNIA—SERIOUS COMPLICATIONS—RECOVERY.

BY M. P. COURTIAL.

A thirty-months-old stallion is affected with a large inguinal hernia of the left side. It is easily reducible, and when reduced the inguinal ring allows the introduction of four fingers brought together. The testicle on that side cannot be felt. The hernia has existed for at least six months. His owner consenting to the great risk of the operation, the colt is thrown down, put on his back, the hernia reduced, and the atrophied testicle is then felt as it comes down the ring. The animal is castrated by the covered operation. Six days later the clam, which had been applied on the cord, is removed. To do so, the left hind leg is secured with a rope and carried forward. As the left clam is cut off, the animal makes a violent effort, and the intestine protrudes through the ring, soon hanging down to the hock. With rapidity the horse is thrown down again and secured; the intestine is returned carefully into the abdomen, and the edges of the wound, brought together again, are secured by a clam above the place where the first one had been. The animal shows slight colicky pain, but otherwise does well. Eleven days after the second clam fell off, and the horse made a perfect recovery.

In conclusion the author says: "To remove the clams after castration in hernia, never carry the hind leg forward, as by it pressure is made upon the intestinal mass, and possibly the intestine may enter the ring and tear off the cicatrix, which is not yet strong enough to resist it. Secondly—It is better to let the clam fall by itself, as in umbilical hernia, as then the cicatrix is sufficiently strong to resist the weight of the intestines.—*Journal de Zootechnie*.

IMPERFORATE HYMEN—TWO CASES: ONE IN A MARE,
THE OTHER IN A COW.

BY PROF. DEGIVE.

First Case.—When laying down, a red tumor, with its mucous covering, mistaken for the vagina, is observed in a seven-months-old filly. The examination revealed the following conditions: The animal standing up, nothing abnormal is noticed on inspecting the vulva. Introducing the hand into the vagina, beyond the meatus urinarius, is felt a true septum, completely imperforate, placed on the limit of the vulva and vagina, which must be the part noticed for a prolapsus vaginae. Trying to lacerate it with the fingers, and failing in the attempt, the animal is thrown down, and as soon as she is in the recumbent position, the tumor makes its appearance. It is round, of the size of an apple, and protrudes through the vulva. Its surface is covered with a mucous tegument of a pale color; it has the feeling of a pouch, with thin walls, and is in continuity with the walls of the vagina; it also seems to have fluid or moveable contents. The membrane being divided, and then excised, a certain quantity of viscons, pale, greyish fluid escaped. The mare had no further trouble.

Second Case.—A yearling heifer has for several days made slight expulsive efforts; her appetite has diminished; the excrements are hard and coated. Several days after her efforts at expulsion have increased, with nearly complete loss of appetite; fœces hard, coated, and sometimes bloody; urine very ammoniacal, and dropping with each expulsive effort. Suspecting a tumor or an abscess of the pelvis, rectal examination is made. A long, ovoid tumor is then felt, extending from the posterior part of the pelvis forward in the abdomen. The finger, introduced into the meatus urinarius, enters with difficulty, being compressed by the tumor. Vaginal exploration shows this tumor to be soft, hemispherical, and situated immediately in front of the urinary meatus. The posterior wall of this tumor is formed of two membranes; the posterior is incomplete, and has two oval openings,

separated by a median pillar; the anterior is complete, adheres to the pillar of the first, and protrudes through the openings of the first. On account of the narrowness of the vagina, and the difficulty to introduce a sharp instrument into it, puncture of the tumor is made with the enterotome; the operation is followed by the expulsion of a thick, sticky, and pale fluid. All the functions returned.—*Annales de Bruxelles*.

COMMENCEMENT EXERCISES OF THE AMERICAN VETERINARY COLLEGE.

On Friday evening, Feb. 27th, 1880, the commencement exercises of the American Veterinary College were held in Chickering Hall, on Fifth Avenue corner 18th Street, New York City. The audience filled this large hall before the hour for the opening of exercises had arrived, and, while being entertained with excellent music from Grafulla's Band, awaited with eager anticipation the entrance of the Board of Trustees, Faculty and graduating class. If the presence of many of the foremost scientists, philanthropists and merchants of this country, combined with the attendance of a large number of New York's fairest ladies, is any evidence of the interest which the public have come to feel in the subject of veterinary science, then our future success is fully guaranteed. Prof. D. B. St. John Roosa delivered the address to the graduating class, consisting of eighteen members, complimenting them on having chosen a profession offering so rich a field for labor, investigation and advancement. The President of the Board of Trustees, Samuel Marsh, Esq., conferred the degree of Doctor of Veterinary Surgery on the following gentlemen:

Bailey, George H., Portland, Me.

Boyd, Henry B., New Rochelle, N. Y.

Cochran, David W., N. Y. City.

Foote, Hubert T., N. Y. City.

Gerth, Jr., Julius, Newark, N. J.

Hanshew, Jr., Elisha, Brooklyn, N. Y.
Hornblower, Walter H. Arlington, Mass.
Jackson, Oscar C., Jamaica, N. Y.
Levi, Emile S., Dubuque, Iowa.
Light, Daniel K., Lebanon, Pa.
Mattison, Mahlon G., Pittstown, N. J.
Roberge, Franklin P., N. Y. City.
Rose, William H., Stapleton, N. Y.
Weeks, Arthur P., Ellenville, N. Y.
Wing, Edgar R., Needham, Mass.
Zuill, William L., Bermuda.

Two of the graduates, not having attained their majority, received certificates of examination, entitling them to their degree when of age. They were:

Cowhey, Thomas C., St. Louis, Mo.
Hall, Ralph W., Fanwood, N. J.

Prof. A. A. Holcombe presented the prizes, which consisted of, first, a gold medal, offered by the Board of Trustees for the best graduation examination, and awarded to Thomas C. Cowhey; secondly, the Alumni Association prize, consisting of standard veterinary works (Fleming's) handsomely bound in Turkish morocco, given for the second best examination, and won by Hubert T. Foote; thirdly, a gold medal given by the N. Y. State Veterinary Society for the best practical examination passed before a special Board of Examiners appointed from the Society, and awarded to Elisha Hanshew; fourthly, Prof. Liautard's prize of a French case of surgical instruments, for the best anatomical preparations, and won by Elisha Hanshew; fifthly, a silver medal, presented by Prof. Liautard, to the junior student passing the best examination in anatomy, and won by John Dougherty, of N. Y. City.

The Valedictory was delivered by E. R. Wing, of the graduating class; when, after the benediction had been pronounced by Rev. A. C. Moorehouse, the assemblage dispersed, congratulating the Trustees and Faculty upon the flattering success which had attended their year's work.

REVIEW.

LAMINITIS.

We are indebted to Prof. A. A. Holcombe for a copy of his "Laminitis," and feel constrained to say that this "contribution to veterinary pathology" merits more than a passing notice.

The pamphlet presents a very neat and pleasing appearance, but, unfortunately, it is not free from typographical errors. If we except these and a slight ambiguity of minor importance in one or two places, there can be but little objection to the general tone and style of this monogram.

The author points out the imperfections of the name of "laminitis," as it is universally applied, but from its long use allows the term to be continued as the appellation of this disease, it only being necessary, as hinted, for the practitioner to avoid *treating* as *pure laminitis* such lesions as "simple congestion of the laminae," "peditis," &c., &c.

In detailing the etiology, Prof. Holcombe evinces more care and accuracy than have previous writers, in drawing the distinction between those causes which are predisposing or exciting; and in reverting to the absurdity of the *instantaneous* recovery of the lungs, &c., at the expense of the feet, in what is called metastatic laminitis. His delineation of the symptoms is clear and correct. We have never witnessed the rapid growth of side-bones, nor the existence of caries as complications or sequelæ of laminitis, but they do, of course, readily take place and are interesting phenomena.

The reasons given for the turning up of the toe and the convexity of the sole look very plausible, and in fact, seem to us more in accordance with the true pathological conditions than all previous theories. We are not prepared, however, until after more careful and extended study of the subject, to indorse his views; nor are we, at present, able to successfully refute his conclusions. If he does not succeed in sustaining his *own* theory, we

think he shows the inefficiency of the causes adduced by these who have preceded him to account for those two conditions, i. e., turning up of the toe and convexity of the sole.

The remedial treatment is up to the highest knowledge of the profession at the present day, but it would have added very materially to the work had the author inserted the result of others' experience as to the prophylaxis of parturient laminitis.

The objections to watering when warm apply if reference is had to *any considerable quantity* of water. It is cruelly inhuman, however, to withhold from a horse, no matter how warm, from four to six mouthfuls of water, the exhibition of which will not be productive of evil results.

The wood-cuts serve remarkably well to illustrate the writer's position. We regard the work as a valuable adjunct to the literature on this subject.

C. B. M.

SOCIETY MEETINGS.

MEETING OF THE MEDICAL ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

The last regular meeting of this Association for the session of '79-'80 was held in the lecture-room of the College on Saturday afternoon, Feb. 21st 1880, the President in the chair and nearly every member present. After the roll-call, on motion of Dr. McLean, reading of the minutes of the preceding meeting was dispensed with. The committee on prize, consisting of the donor, Dr. McLean, Dr. Coates and the President, reported that the prize had been unanimously awarded to Mr. Geo. H. Bailey, of Portland, Maine, for his paper on "The different breeds of American horses, their uses and liability to disease." The President, Prof. Holcombe, made the presentation address, in which he said; "Mr. Bailey: It has been determined by the committee,

that the paper which you presented this Association during the present session, exhibited evidence of having received the deepest study, widest reading and most extensive inquiry and research of all that were read. While I have no desire in the least to disparage the merits of the other papers in competition, I compliment you on the ability which you have shown as a writer on so interesting a subject as that of which you treated. On the part of this Association and in the name of the donor, I assure you it affords me the greatest pleasure to present you with this most handsome case of post mortem instruments, and while I trust you may but seldom have occasion to use them on your own patients, let me hope their presence may ever serve to remind you of the many happy hours we have spent here together, that they shall always testify to the kind respect which we all entertain for you, and for all time prove a most gratifying reminiscence of the time which you have so successfully spent in obtaining a knowledge which shall qualify you to expend the rest of your life in a labor of love and, we hope, of pleasure." Mr. Bailey, in cordial terms, thanked the Chair, the Association, and the donor for the honor done him, and assured all, that in the future, as in the past, he should ever strive to be worthy their kindest regards. After providing for the granting of the Association's certificates of membership, the meeting adjourned subject to the call of the President.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The usual fortnightly meeting, held on Thursday evening, was unusually interesting. The chair was occupied by Professor McEachran. Mr. Henry Quimby, of Rochester, N. Y., was elected, and Mr. Henry Metcalf, Hudson, was proposed for membership.

The first paper was read by Mr. Richard Price, on the death of a horse caused by the too free application of coal oil.

Mr. A. W. Harris, Ottawa, read a very interesting paper on glanders, in which its contagious nature, incurable character and communicability from the horse to all animals, cattle excepted,

were explained. He also pointed out that not only animals, but men became inoculated ; hence this was a disease which claimed the attention not only of veterinarians, as such, but sanitarians and philanthropists should see that this disease was properly dealt with by the authorities, and wherever it occurs the animals should, after proper examination by competent persons, be destroyed. He pointed out the different diseases which might be mistaken for glanders, and urged his fellow students to study the disease carefully, as mistakes sometimes occurred by the disease not being recognized, and serious losses entailed by the blunder.

A most interesting discussion ensued, which elicited valuable information.

The Chairman being asked what the law of Canada was with regard to this disease, replied that this disease being a contagious one, was included in the provisions of the "Act to provide against infectious or contagious diseases affecting animals," May 15th, 1879, in which section 2 provides that all such diseases be at once reported to the Minister of Agriculture ; and in case of malicious or fraudulent concealment of the existence of such disease, the person so acting is liable to a fine of two hundred dollars.

No. 3 provides that if any person keep or graze any animal known by him to be infected by such a disease, in or upon any forest, wood, moor, beach, marsh, common, waste land, open field or roadside, is liable, on conviction, to a fine of two hundred dollars.

No. 4 provides that any person bringing, or attempting to bring, into any market, fair, or other place, any animal known by him to be infected or laboring under such an infectious or contagious disorder, shall, on conviction thereof, forfeit and pay for any such offence a sum not exceeding two hundred dollars.

It will thus be seen that ample provision is made for suppressing and stamping out such diseases.

After the close of the discussion, the following important resolutions were unanimously passed :

Resolved, That this Association has learned with pleasure that it is intended by the Council of Agriculture to apply to Parliament during the coming session for a bill for the protection of

the veterinary profession in this Province, and that it is the unanimous opinion of this Association that such a bill is much needed, and will be the means not only of raising the status of the profession, but will prevent much suffering and injury to animals from the ignorant and cruel practices of quackery.

Resolved, That this Association recognises the necessity for some steps being taken to form a Dominion Association, so that as a united body, yearly or half-yearly meetings could be held, at which questions relating to the general interests of the Profession could be discussed, and further, that in the opinion of this Association the present disunited condition of the Profession, and the want of a Dominion Association is injurious to it, and not only lessens its influence, but retards its progress.

Resolved. That circulars be issued by this Association to members of the Profession in the several Provinces, asking them to co-operate in the formation of such an Association, and a meeting be called at the city of Ottawa at as early a date as will suit the convenience of the majority.

After votes of thanks being passed to the essayists, the meeting adjourned.

At next meeting Mr. Brown and Mr. Baker will read papers.

—*Gazette, Montreal.*

VETERINARY HONORS.

The profession will no doubt be gratified to learn of the appointment of C. P. Lyman, M.R.C.V.S., late Professor of Veterinary Medicine in the Agricultural College of Massachusetts, to the position of Veterinary Surgeon to the United States Department of Agriculture, at Washington. At present he is engaged in determining the extent to which pleuro-pneumonia exists in our Eastern and Middle States.

NOTES AND NEWS.

HYDROPHOBIA.

The Philadelphia papers of Jan. 28th contained an account of the death of Mrs. Mary R. Lindermier from hydrophobia. A strange dog bit her slightly on the finger some six weeks before she developed symptoms of the disease. She was treated with woorara, but it only served to moderate the terrible spasms which became so powerful at times during her delirium, that she could scarce be kept from injuring herself and attendants.

THE LEGISLATURE of the State of New York has passed a bill appropriating the sum of \$35,000 to be applied in continuing the work of the pleuro-pneumonia cattle commission.

A BILL REGARDING THE DISEASES OF DOMESTICATED ANIMALS.

[*Special Dispatch to the World.*]

WASHINGTON, February 23.—Representative Le Fevre's bill for the suppression of infectious and contagious diseases of domesticated animals provides for a Board of Commissioners to consist of the Commissioner of Agriculture, the Secretary of the Treasury and the Secretary of State. It is to employ a veterinary surgeon who is to draft such rules as he may deem necessary for the suppression of any outbreak, which upon the approval by the board are to be certified to the Governor and Veterinary Surgeon of the State wherein the disease prevails. Upon their acceptance by the Governor the Commissioners are to appropriate such a sum as may be deemed necessary for the purchase and slaughter

of all diseased animals, provided that a sum not exceeding one-half the value of a healthy animal is to be allowed. Should the sum first awarded not be sufficient to eradicate the disease, an additional amount may be allowed. Any State failing to adopt the prescribed regulations within two years from the passage of this act is to be debarred from its benefits. The sum of \$100,000 is appropriated for carrying out the act. The supplemental act for adoption by States provides that upon the outbreak of any infectious disease in other States so connected that animals may be transported in a comparatively short time, the Governor is to issue a proclamation prohibiting the importation into the State of all animals belonging to the class affected. This prohibition is also to extend to all articles in a fresh state, except butter, cheese and milk, but it is not to affect the trade in perfectly dry or well salted hides, wool, hair, tallow, perfectly air-dried bones and horns, and hoofs free from soft animal matter. As soon as any case occurs within the State the owner of the animal is to inform the Governor, who is to dispatch a veterinary surgeon to investigate the disease. The owner must not slaughter the animal until the nature of the malady has been determined by the surgeon. Upon receiving the report of the surgeon the Governor is to issue a proclamation prohibiting the removal of all animals of the class affected from the locality in which the outbreak occurred, and to authorize such quarantine measures as he may deem expedient. He is also to notify the President of the National Board and ask the co-operation of that board. All measures for the suppression of diseases are to be determined by the surgeon of the National Board and the surgeon appointed by the Governor. They may prepare such rules as they may deem expedient, with such penalties as will compel a faithful compliance, and on approval by the Governor these rules are to have the force of law. The Governor, on the presentation of satisfactory evidence of the complete suppression of the disease, is to issue his proclamation suspending all quarantine measures.

CORRESPONDENCE.

ARMY VETERINARY SURGEONS.

Editor Veterinary Review :

Since you have been so kind as to call the attention of the Government and the profession to the condition of the army, as regards the veterinary service, let me ask, through your columns, to direct attention to a point which seems to have been overlooked. The determination of the War Department to accept only regularly qualified veterinary surgeons hereafter is a great improvement in the right direction, but the question remains whether or not proper measures have been taken to secure the services of such men. It is not enough that the declaration be made to employ only educated surgeons, but such provision must be made that they can, without injustice to themselves, accept of the positions offered. In the first place, the remuneration is not sufficient to secure the best men, for a private practice of seventy-five dollars a month can soon be established by any moderately talented veterinarian, while he has the prospect of a further and continual increase of patronage. Secondly, the veterinary surgeon is employed as a civilian, and receives no rank whatever, being, in reality, unconnected with the service except in the capacity of a contractor; no matter how talented he may be nor how rapid his progress in the acquirement of knowledge, he has no opportunity for professional advancement, unless he finds it in private life. Such a condition of affairs must certainly serve to greatly impair the efficiency of this branch of the service, for there is nothing to stimulate the surgeon to rise above a routine practitioner who sees in his work only the meagre living which his limited salary affords.

Lastly, and the overlooked point in question, why does the Government require a candidate for the position of veterinary surgeon to repair to the point where the regiment is stationed, and there undergo an examination before he can know that he has a chance of being accepted? This seems like surrounding

an undesirable position with insurmountable difficulties and yet asking some one to sacrifice himself by trying to take it. When you consider that most of the graduates that are likely to apply for these positions in the army, reside in the Eastern and Middle States, you will readily understand what a hardship it must be for the candidate to travel two or three thousand miles, at an expense of from fifty to one hundred dollars, in that he may present himself in competition for the position, without even the guarantee that the place will not be filled before his journey is completed. What inducement can the veterinarian have to apply for so uncertain a position! Why cannot the candidate for the position, now that he must be a graduate in good standing, have his qualifications considered nearer home, (at Washington, for instance) so that no possibility can exist of his making a journey only to find that he is too late or rejected, and compelled to return at a loss of money and time that most cannot afford? If the veterinarian is willing to sacrifice his prospects of professional success and advancement to the advantage of his Government, ought not unnecessary obstacles at least be removed from the beginning of his course? I cannot see that the Government makes a single sacrifice, or effort even, to secure better veterinary surgeons, for in the past it has employed unqualified men on the same terms and on the same conditions that it now offers to the educated practitioner. If the educated man is more worthy of hire than his unfortunate predecessor, he is also worthy of a greater remuneration. Let the Government of the United States render justice to her army veterinarians, and in a short time the service will be equal to any in the world.

Respectfully,

A VETERINARIAN.

AMERICAN ARMY VETERINARY PRACTITIONERS

To the Editor of the American Veterinary Review :

SIR:—Hearing that a new army warrant for the veterinary service of the army of the United States is in process of construction, I venture to make a few remarks on the subject, hoping

thereby to ventilate the matter more thoroughly, and, more particularly, to induce some graduated military veterinary surgeon to raise his voice and bring before the profession the grievances of that particular branch of the service.

The following passage is taken from the *Veterinary Journal*, of England, August, 1879, page 139, written by its able and gentleman-like editor, Geo. Fleming, Esq., V.S., 2d Life Guards:

“Although the expense of living in the cavalry is higher than in other branches, yet veterinary surgeons under the new rates can afford to live at mess, be otherwise comfortable with a salary of £250 yearly, no rent, no taxes or rates to pay, fuel, light and servants found, and no forage to purchase. It is his own fault, if a young man cannot afford to live well in the army.”

I fully endorse the above, and consider the life of a British Army V.S. an enviable one: he is well paid; his two horses are fed; he gets fuel, light, servant and lodgings free; he holds Her Majesty's Commission, and is therefore an officer and a gentleman; he wears a rich uniform; is on intimate terms with his brother officers; his social position is good; he lives in a large garrison town; his promotion is sure; he gets a liberal pension for loss of health or long service; in case of death, his widow is provided for; his manual labors are nil, as he is provided with a subordinate (Farrier Sergeant) who dispenses and administers medicines and sees that his superior officer's instructions are fully carried out; in fact, his life is a fac-simile of his professional brethren in the European armies, if not a great deal better.

Let us now turn to those persons practicing at veterinarians in the United States military service, if such a department has an existence.

Yankee military authorities are somewhat boastful of their superiority and general army efficiency; for their sakes, let us hope this does not include their military veterinary service. Is there a principal veterinary official, if so, does he possess any professional qualification? Where are his annual reports, his statistics as to annual losses, causes and rates of death, general health of animals employed in military service, rejected animals unfit for service, etc., etc.? I have never heard of such a docu-

ment from the American War Office, although such are annually published in all European armies. What is the social and professional status of United States Army Veterinary Surgeons? For, as far as I can learn, qualified practitioners are rare in the Yankee Cavalry. "Sick animals invariably die in the service," therefore the loss must be comparatively enormous for want of proper professional skill. His position is stated by one military authority to be that of a civilian performing a certain military duty. By another, he is an enlisted man, ranks as Sergeant Major with a meagre salary, and, as far as I can learn, no extra allowances, no forage, servants, quarters, etc. Now of all sheer nonsense, to expect a respectable young man with sufficient money and education to go to college for two or three years, graduate in a scientific profession, and then accept a position (indefinitely) at best as non-commissioned officer in a cavalry regiment; and if he happens to be driven by necessity to that course, what are the results? Does he take an interest in professional details? Are his instructions likely to be properly carried out by his subordinate (if he has any)? Who will be his companions. He is by his professional education above those in the ranks. His unenviable position places him beneath those who are his equals in Europe; and if he should attempt to maintain his social position, the result may be anticipated. And it must be remembered that American cavalry are mostly stationed at isolated forts, where officers are chiefly dependent on one another for social amusements. The social and pecuniary position occupied by private professional practitioners is surely and rapidly improving, more particularly in the United States. The recent rule of not accepting any but qualified gentlemen for the service, is sheer nonsense and will remain a dead letter, owing to the grievances which I have endeavored to point out. Treat the veterinary surgeon as a graduated scientific medical practitioner, and in a similar manner to the European Veterinary Medical Service, give him a position and relative rank as a commissioned officer, and like them provide for his future welfare in case of ill-health, injuries and long service, and the result cannot be otherwise than satisfactory. The present non-qualified attendants could act as subordinates to their proper

superior veterinary officers, and rank as in the British army (Farrier Sergeants).

Why are the various schools silent? And also any qualified military veterinary surgeon, those being mostly interested, should make it their business to ventilate their wrongs, endeavor to raise the standard of their profession. And at this critical period, is there not a corner in the United States Military Gazettes for the veterinary surgeons to raise their voices?

Apologizing for trespassing on your valuable space,

Yours truly,

A BRITISHER.

CORRECTION.

Editor American Veterinary Review :

I desire to correct an inference of yours in your last issue, and state plainly that my position as veterinary surgeon to the "Penn. Board of Agriculture" does not in any way connect me with the action of the State authorities in dealing with contagious pleuro-pneumonia. I am *not* the "our surgeon," who is treating contagious pleuro-pneumonia with "the fumes of burning sulphur," nor have I any sympathy whatever with *any* but the most stringent measures in dealing with this scourge. The actions of Mr. Edge, as "special agent" of the Governor are not necessarily endorsed by the members or officers of the Penn. Board of Agriculture since the capacities in which he acts are *entirely distinct* from each other.

Be kind enough to give this reply publicity in your journal, as I do not wish the unenviable position of "our surgeon" forced upon me by the profession.

February 12th, 1880.

C. B. MICHENER, D.V.S.

Editor Review :

As the REVIEW has published from time to time, articles that reflect on my personal integrity—as well as the manner in

which I became a member of the veterinary profession, I trust it will give space for a very brief article by way of reply. There is no form of literature so cheap as calumny, and none that a professional man can better allow to pass unnoticed; and were it not for the fact that the REVIEW seemingly gives sanction to these articles by tacitly handing them out to the public, I would not think it necessary to give them a second thought.

In these articles a labored effort is put forth to show that there was some dishonorable practice on the part of the *Ontario Veterinary College* in conferring a degree on me with less than the proper requirements: that mine was a case of premature delivery. Now let us take the *American Veterinary College* as a standard of comparison for judging of honorable graduation. I believe none of these articles have insinuated that it is open to the charge of partiality or half-way work with its students, and what this institution would do, may be looked upon as orthodox. With this fact before us, let us look a little into my own history in connection with that institution.

I went to the *American Veterinary College* in December, 1875, for the purpose of entering as a student. Before entering the class I advised with the principal (and present Editor of the REVIEW,) as to whether I had best take all the lectures of the course during the remainder of the session, which had then been in progress some weeks. His advice was to *omit* a part of the lectures: those on portions of the subject I had studied during a previous college course, with better facilities than were offered by the *American College*. Accordingly I acted on this advice. But before doing so I inquired whether this omission would in any way interfere with my graduation the following year, should I decide to return to the institution to complete the course: to which inquiry I received the answer, "*it will not:*" that I would not of course be exempt from examination on these subjects, *but the omission would in no way be a bar to my eligibility to examination for the degree of the College, when I should have completed another year's study.* I continued in the College till the close of the session. Less than a week before I left N. Y., I had another conversation with the Dr. on the probability of my

return the following year. During this conversation I was cordially and courteously asked to return and take my degree at the end of the *next year*. The inducement was presented to me, that a desirable position could probably be obtained in the College. This was my status in the *American College* at the close of the session of 1875-6. I take it for granted, the Dr. acted in perfectly good faith with me.

In the autumn of 1876, I started east for the purpose of spending a second year in a veterinary college. I had not yet made a selection of an institution, but had decided to visit the colleges at Toronto and Montreal before going to N. Y., should I finally decide to go there. After spending a day in the *Ontario College*, I decided to remain there during the winter. One of the principal causes that induced me to make this choice was the fact that the college year continued a month or six weeks later than that of the *American*, thus affording me so much longer time for study. I remained here till April, '77, when I completed the course and took my degree. Now was there anything irregular or dishonorable in this, either on my own part or that of the *Ontario College*? The facts are, if I had chosen to do so, I could have taken my examination at the *American* with at least a month less time for preparation than I had at the *Ontario*. I do not say this with any intention to disparage the *American College*, but because it is the simple truth which justice demands.

Now why all this outcry? Had I done as I was solicited to do, by the authorities of the *American College*, I certainly would have been regarded by the friends of that institution as an honorable member of the profession; why my preference for acquainting myself with the methods of another institution, and taking a month more time for preparation should render me less so, is a question which I am quite willing to leave to the judgment of all fair-minded men.

After all this is said, the important question with either institution *should* be, and I believe *is*, the capabilities of the applicant for a degree. The prescribed two years in either of the colleges does not signify so much as some of these "wise men (!) from the East," would seem to believe. I knew students in both the Amer-

ican and Ontario Colleges who would reflect no credit on their alma mater, should they take the remainder of the present century to prepare for professional work. The only standard by which men can be correctly judged is what they have accomplished.

I do not like to refer to my own professional achievements, but the coarse and ungentlemanly manner in which I have been assailed, demands that a word or two be said on this subject. I may say the years that have passed since my graduation have not been spent in idleness. During this time some of my lines of work have been pushed far beyond the point attempted to be reached in the instruction of either of the colleges in which I studied. During the past year I had under my instruction twenty young men, who, in point of scholarly attainments, were second to no class it has ever been my privilege to meet in a veterinary college. Such an interest has been awakened in the profession through courses of lectures given at the *Agricultural College*, to students who were desiring instruction in veterinary science, that the organization of a special school become a necessity. Such a school has been organized with every prospect of success.

No one knows better than myself that there is yet much to do to bring the institution to the degree of excellence that is to be desired: and no one knows better the fact that it has many and important advantages, that give ample promise of great good. I have doubtless not done so much as might have been accomplished by some other member of the profession, but to have made this beginning in a State the live stock interest of which is about double that of all the New England States put together, and where there was not the nucleus of a profession to start from, is a work that has for me the elements of encouragement, to say the least.

I have a personal acquaintance with nearly every prominent breeder in the State; have mingled with them in their conventions and frequently given addresses before them. The rapidity with which Iowa has come to the front rank as a stock-growing State, shows these men to be intelligent and energetic. If I am the professional impostor that "these mine accusers" would have the world believe me, then they pay a high compliment to my

shrewdness. For he who can sustain himself before such bodies of men, his classes and associate professors, on vain and empty pretensions, must be a man of more ability than he who does the same thing by fair and honorable means. While I lay no claim to the profession of "genius," I believe my work may be taken as a fair average of that done by my former classmates in college. Why I should be selected from among all these as the special target for every irresponsible man who is willing to throw dirt from behind an anonymous signature, will be best understood by those who best know the meaning of the word envy. I do not claim exemption from fair and honorable criticism, but I do claim that some of these articles bear upon them the stamp of malevolence, much better defined than an honest purpose to further the interests of the veterinary profession. Every one engaged in this work knows something of the difficulties under which we labor in bringing about a proper recognition of the profession. When there is added to these expected difficulties, the opposition that springs from jealousy and rivalry, no matter how feeble and obscure the source, the work is by so much complicated. While I have no standard of measurement sufficiently delicate to detect any effect from this opposition to my work, the want of evil fruits does not in any way abate the guilt that attaches to such unprofessional conduct.

Much is now being said of the "low condition of the veterinary profession" in this country. I would recommend as a wholesome sanitary measure for the removal of the evil, the abandonment by some of the professional brethren of that stereotyped form of petition, "Lord bless me and my wife, my son John and his wife, us four and *no more*."

M. STALKER.

Richland, Iowa, Feb. 13, 1880.

[We had scarce considered it necessary to inform readers of the REVIEW, that the editor in no wise agrees with the sentiments of all correspondents, and does not hold himself responsible for

their statements. The pages of the Review are ever open to both sides of professional questions. The question upon which the above correspondent writes, has received no attention nor expression of opinion from us heretofore, and at present we only desire to correct what might lead to a mistaken impression if we remained silent. The American Veterinary College concedes all students from Agricultural Colleges allowance for time spent in the study of chemistry, and has never graduated, nor offered to graduate, any student that has not attended two courses of lectures on *all* the subjects taught. Mr. Stalker omitted other branches than chemistry while a student at the A.V.C., and would not have been admitted to the examinations for graduation on the completion of one other session. The Faculty appointing power resides alone with the Board of Trustees, while the positions of House Surgeon and Assistant House Surgeon are awarded by competition.

ED. A. V. R.]

PRELIMINARY OFFICE INSTRUCTION TO STUDENTS OF
VETERINARY MEDICINE.

Editor Veterinary Review :

Since the subject of veterinary education is receiving so much attention, both here and abroad, I desire to say something in regard to the primary instruction which the student should receive in professional matters. As to the question of a thorough general education, no one, at all acquainted with scientific matters, can fail to appreciate the indispensable value of such training, and it is only to be regretted that all students of veterinary science cannot be college graduates, before entering upon their life study. But as to the importance of thorough preliminary office instruction, there may be differences of opinion. In some European countries, and especially in England and Scotland, office instruction is considered as one of the essential elements of the students' education. There, in many instances, he is indentured to a practitioner for a certain term, with the same care and strict-

ness of detail, as is observed with apprentices sent to learn a trade. It may be urged that ours is a profession and not a trade, and that for this reason, and because many have attained their majority before beginning their professional studies, students of medicine should have more liberty of action regarding their duties. This is true in a sense, for it is generally conceded that men are the best judges of their own opportunities to acquire knowledge, and that it is somewhat degrading to the independent scientific student, to be under obligations to perform duties, that in many instances, partake strongly of simple unskilled manual labor. But this, in great part, is a mistaken conception of what really constitutes a thoroughly educated professional man. There is no work, no single detail, belonging to the entire practice of the science of veterinary medicine, which should not be thoroughly understood by the accomplished veterinarian; the coarser details can nowhere be so fully and readily learned as in the office and infirmary of the private practitioner. Many of the things which he will learn there, it is true, he may never be called upon to perform when in practice for himself; but unless he knows how they should be done, and how to do them, he is not competent to instruct. Of the minor operations, all manipulations and the application of hygienic principles, in no place can he obtain a better practical knowledge than with the practitioner, who has but the one to teach, and the opportunity and time to determine that the subject is thoroughly comprehended.

Students who take office instruction learn, also, many of the habits of animals, and especially how to handle them; learn to observe the general symptoms of sickness; how to administer medicines and to compound them; how to study, what to study; acquaint themselves with technical language, and, one of the most important of all things, learn how to do business. To this claim of advantages accruing to the student, perhaps some will interpose the objection, that the student is liable to learn many things which do not accord with the teachings at college, owing to the busy practitioner getting rusty on many subjects, and not keeping up to times as regards the daily advancement of science. Here, again, the objection is but partly valid, for while he may learn a few old

ideas that have been exploded since the college days of his preceptor, he obtains much that there is but little time and opportunity to teach him at college, with the short sessions of English and American schools—facts that are unchangeable and which he must sometime learn. It seems to me any one who will carefully consider the matter, must agree with me, that proper office instruction, before and between the college sessions, is an advantage which can scarcely be over-estimated. But the questions which come up at once are, What constitutes proper office instruction? and secondly, What are the facilities, in this country, for obtaining such instruction? The first question is one, of course, about which there may be some diversity of opinion, but all will agree in this, that the student should here be taught the grand principles which are to underlie his future professional studies, and that are to make him, not only a scientist, but an honorable, conscientious professional worker.

The method practised by too many English and Scottish veterinarians, of sending their students to the infirmary and pharmacy, where they spend time with the hostlers talking horse-talk, for the want of better employment, or compounding balls of aloes, diuretics or liniments, cannot be too strongly condemned. It is a waste of valuable time that the practitioner is responsible for, and it too often lays the foundation for a careless, lazy, *horsey* individual who manages to slip into the profession, after a time, only to become a disgrace to himself and to those who, in name, are associated with him.

When the practising veterinarian accepts a student for instruction he assumes a duty the gravity of which many but imperfectly understand or do not fully appreciate. It is not enough that the student be told to read whenever he finds time, but he should be told what and how much to read, then have his memory tested to see if he retains and comprehends what has been taken in. His work in the pharmacy should be carefully superintended so that he may learn to be exact, skilful and dexterous—in other words make him a pharmacist, not a mixer of drugs; teach him here also the physical properties of veterinary medicines, so that he shall be able to recognize them without difficulty, as well as the usual

dose of each. In the infirmary cultivate habits of observation. Make him acquainted with the temperaments, dispositions, habits and general characteristics of the animals which are our patients, and teach him to note the general symptoms that distinguish the sick from the healthy. Tell him what the prominent symptoms of special diseases are, and how best he can see or detect them; teach him above all things, in this connection, to be a good diagnostician. Let him learn to make examinations, especially for lameness, so that he may become familiar with topographical anatomy and accustomed to the handling of patients, for only in this way can he learn to be careful and at the same time void of timidity. Have him know where to find the pulse in the different animals and how often it beats in health, so that in disease you can make him comprehend the change in quantity, but particularly in quality. Teach him the healthy respiration and the abnormal; where to take the temperature—how, when and why you take it. Let him make rectal and vaginal examinations, tell him what he finds and the value of the examination in detecting disease. Familiarize him with the buccal cavity, the nasal cavity and the smell of the breath; the normal appearances of the secretions and excretions, and what their general changes indicate.

Teach him hygiene in a practical manner by directing his attention to the general care and management of both the sick and well, and give him an insight into physiological and pathological shoeing by showing him how you shoe and telling why you so shoe. Last, but by no means least, cultivate a disposition to original research by supervising his post-mortem examinations and indicating to him what is healthy tissue and what is diseased, and the significance of the latter.

As to the facilities for obtaining proper office instruction in this country, I confess they are exceedingly limited. In the first place there are but few veterinarians here, and a large percentage of these have not the opportunity nor the facilities for such teaching. A majority of the best practitioners live in cities where their practice is almost entirely confined to the diseases of horses, with an occasional case in the dog. It is not in these practices that the student can gain the widest general knowledge of the

elements of his profession. On the other hand, suitable country practices are possessed by the most limited number who are in anywise competent to instruct, although it is in such practices that the fullest opportunities are presented. Especially is this true regarding cattle practice and obstetrics, two of the most important branches of veterinary surgery when we consider the immensity of our interests in this direction.

But great as is our deficiency in this matter of office teaching, it must yearly become less marked, for a majority of the graduates at the present time (and it must continue to be so in the future), will make country practices that afford suitable opportunities for all intending veterinarians to gain a primary practical knowledge of their profession and its duties.

Respectfully,

A VETERINARIAN.

PLEURO-PNEUMONIA IN NEW JERSEY.

Mr. Editor :

Dear Sir:—In last issue of REVIEW, page 435, appears an editorial article which refers to a report submitted to the Governor's Agent for the stamping out of contagious pleuro-pneumonia in New Jersey in the following words: "New Jersey is not yet clear of this *plague*, and she will not be so long as she continues to release from quarantine after a period of ninety days, animals that have had the disease."

Now, Mr. Editor, we would respectfully call your attention to the fact that the report in question does not state any such thing either in substance or in fact. We, on the contrary, do not take any stock in recovered cases, and have always and shall continue to act accordingly.

Yours Respectfully.

JAS. C. CORLINS, D.V.S.

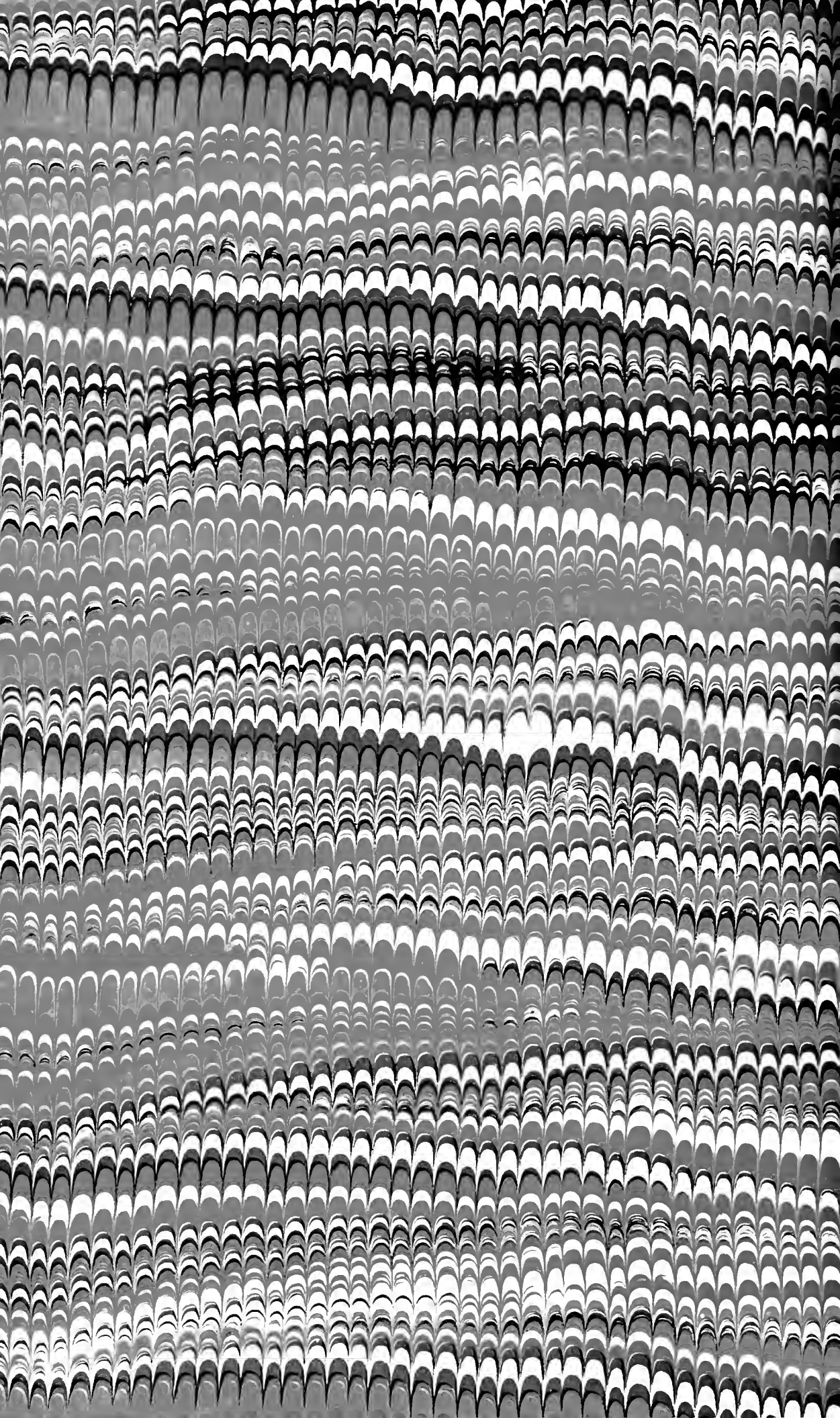
Jersey City, N. J., Feb. 2d, 1880.

EXCHANGES, ETC., RECEIVED.

Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Archives Veterinaires, Annales de Belgique, Clinica Veterinaria, Revue fur Thierheilkunde und Thierzucht, Turf, Field and Farm, American Agriculturist, Scientific Farmer, Scientific American, Index Medicus, Country Gentleman, Prairie Farmer, Live Stock Journal, Bulletin National Board of Health, Medical Record, Medical and Surgical Reporter, Journal de Zootechnie.

COMMUNICATIONS RECEIVED.—A. A. Holcombe, C. B. Michener, J. Myers, Jr., J. C. Corlies, M. Stalker, A Veterinarian, A Britisher, Prof. A. Smith, A Student, J. W. Gadsden.





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